AVIATION WEEK

JAN. 12, 1948

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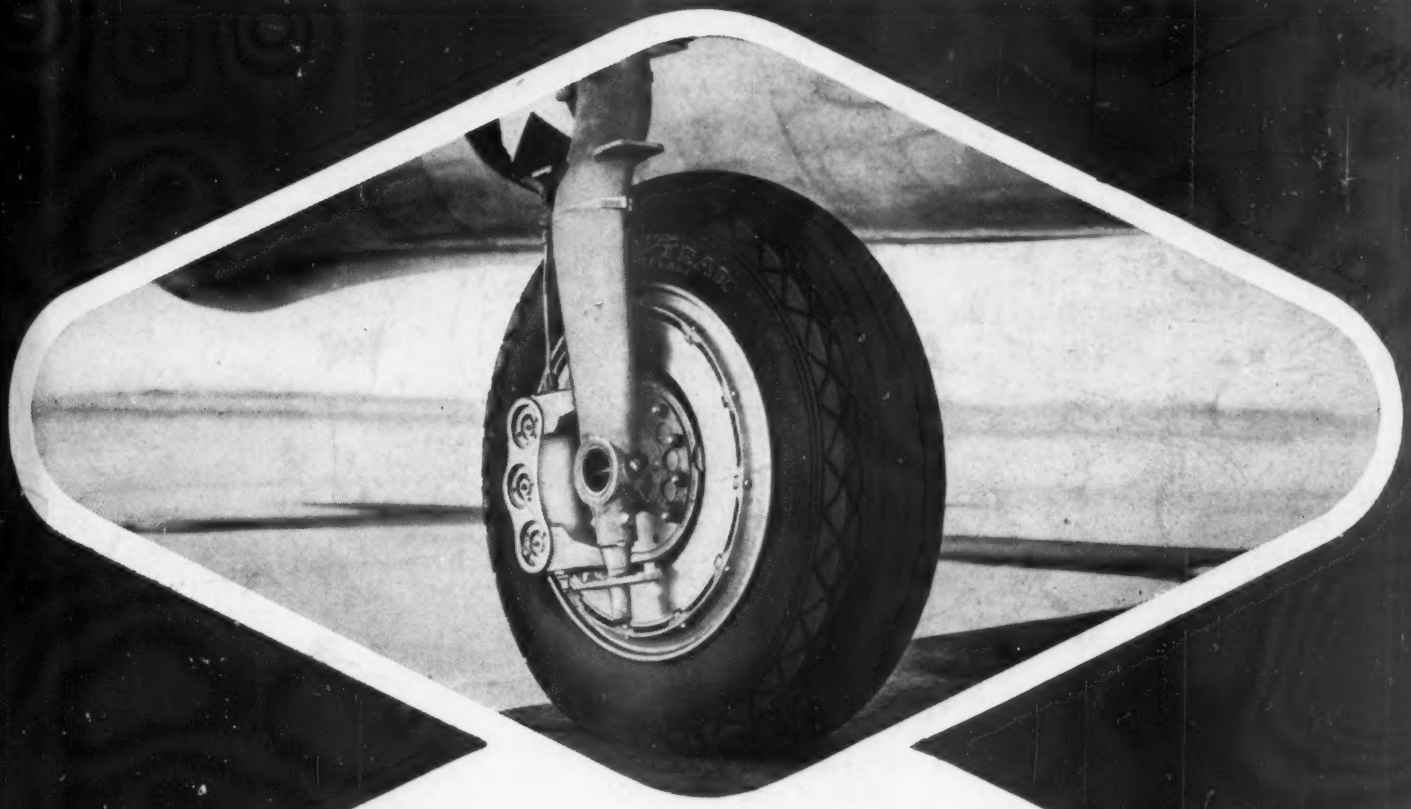

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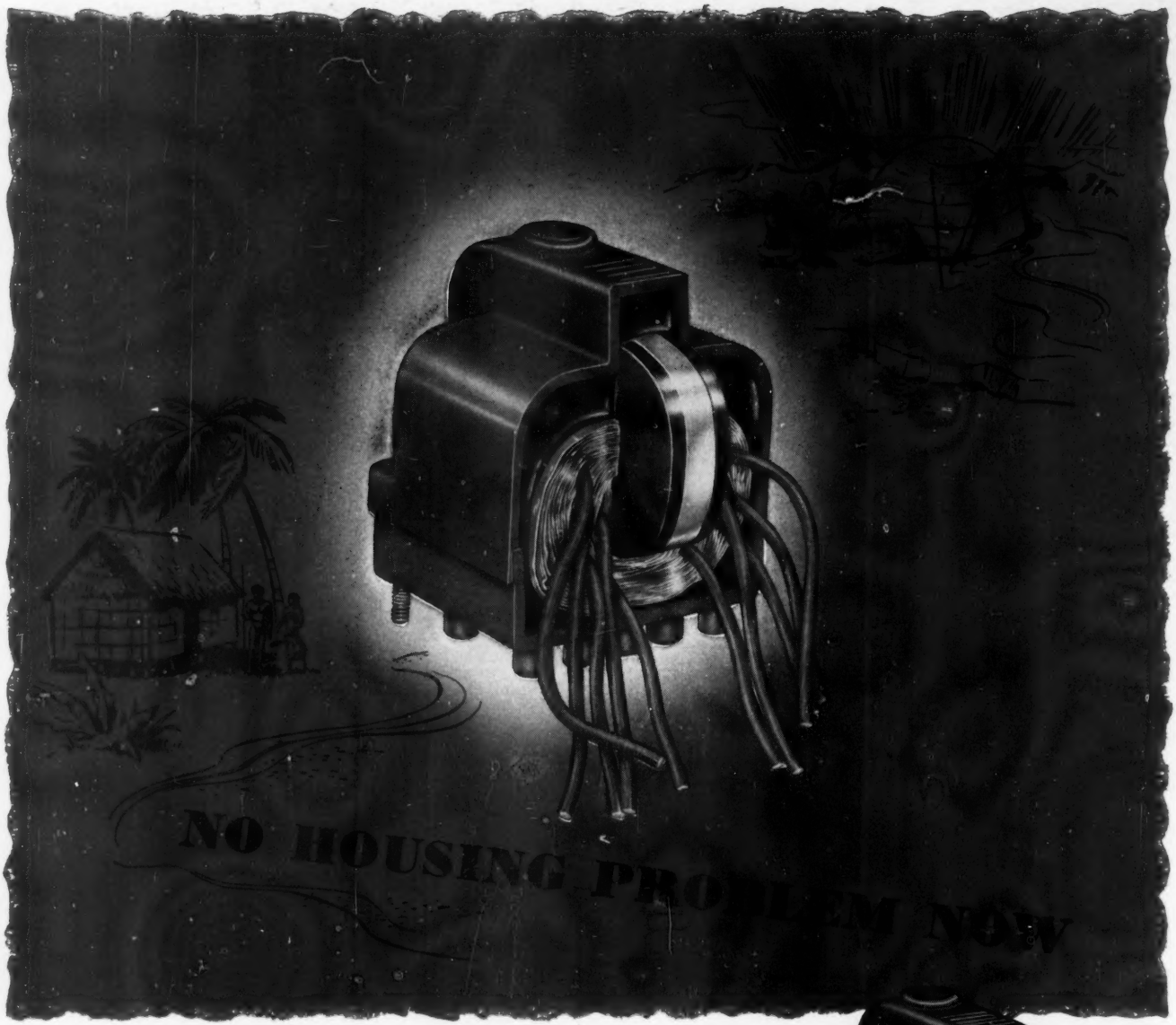

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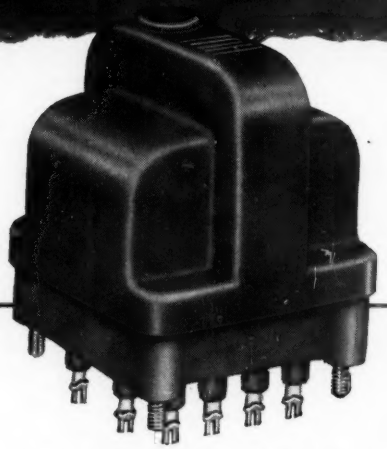

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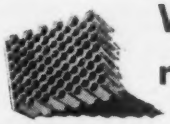

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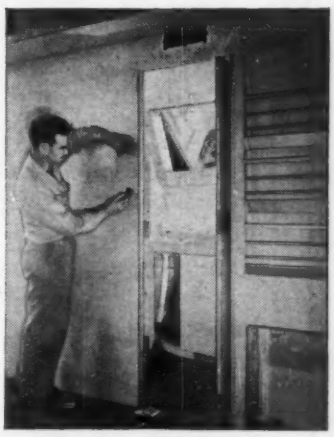
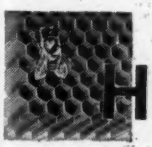


Installing Armorply Honeycomb wall of ladies' dressing room in the Boeing 377 Stratocruiser.



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Vol. 48 No. 2

AVIATION WEEK

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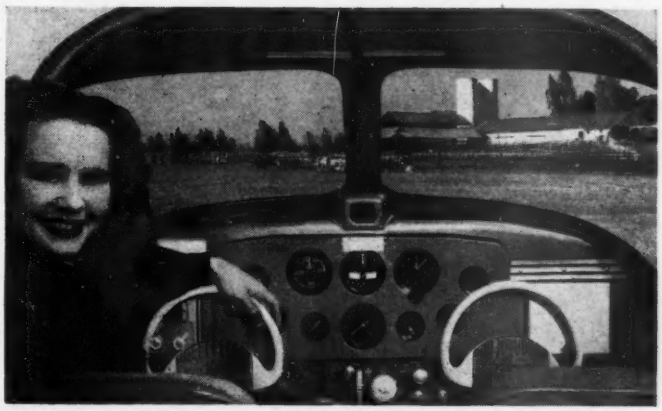

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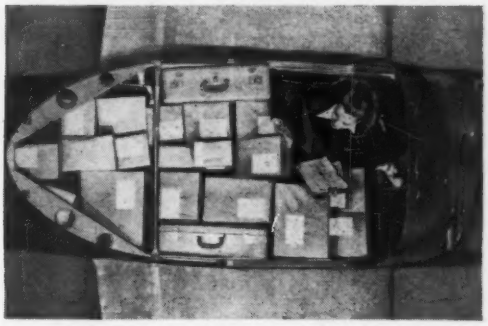

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THE AVIATION WEEK

EXIT LANDIS—The little man with the shadowed eyes and the rumpled suit walked out of his fifth floor Commerce Building office for the last time on New Year's Eve, ending what has been described as the one-man reign over CAB.

Keen aviation observers see the departure of James McCauley Landis as probably heralding something far more important than a change in membership of the Civil Aeronautics Board.

Absence of Landis' forceful, positive personality in itself will mean a change in the Board's outlook and methods. But it is likely that developments brewing will go far beyond that.

The situation regarding safety may furnish a clue. Once before when the old Air Safety Board had an irreparable, consistent two-to-one split, official dissension cast a pall over the industry and resulted in—at least was the excuse for—a revamping of the government's aviation structure. It could happen again.

The breach between Landis and some of the major airlines was deep and wide, could never be mended. Main reason was Landis' views on safety which were linked with economics. Often he has indicated privately that improvements in the airline safety record could come only through measures—such as the temperature accountability proposal—which would cost the carriers payload.

That's a dollars-and-cents matter on which the financially hard-pressed lines never would surrender.

CHANGE IN FIVE DAYS—Some of the major airlines bucked Landis' re-appointment, are happy he was dropped. But observers discount the widely publicized reports of the decisive effect of airline efforts against the former CAB chairman. Other reasons for Landis' failure to keep his job seem more paramount.

Exact nature of those reasons is a mystery even to Landis. He wanted re-appointment. He told associates even five days before the President's announcement that he had been assured he could remain on the job.

Insiders are convinced the terse announcement that Landis would not be re-appointed was as much a surprise to the chairman as it was to the public. Apparently the President did not make his decision known in advance to Landis, nor did he consult him. Landis is hurt by the lack of a "Dear Jim" thank-you note. Even so, friends of the chairman think Landis earned at least that.

INTER-OFFICE FEELING—By nature Landis is a one-man show. He believes in direct action, has little taste for administrative routine or the niceties of official procedure.

He incurred the unflagging opposition of the State Department by his one-man negotiations with Brazil and Britain, about which State learned later, only after the time when the deals had been successfully concluded.

While he took CAA's side on the landing aids matter, he lashed the agency on safety aspects, more than once gave private gatherings the impression that he intended in one way or another to keep closer tabs on CAA.

This aroused CAA feeling and—more significant—the interest of CAA's Cabinet representative, Secretary of Commerce W. Averell Harriman.

Landis' good-bye statement began with characteristic bluntness: "I have only this comment to make about my differences with other members of the government." Longtime aviation observers see those words as strengthening their conviction that Landis' exit culminated nothing but set the stage for something. Landis' next sentence also is a factor.

MATTER OF INDEPENDENCE—"I have a firm conviction," the statement reads, "that the development of the air potential of this country requires an independent Civil Aeronautics Board free of domination by other transportation and financial interests and stifled by no monopoly."

Landis many times has expressed his conviction of the importance of an independent CAB. In chats with confidants since his dismissal he has not indicated any knowledge that CAB's independent existence is imperiled.

But there are grounds for thinking that he must fear for the agency's future independence.

Landis' valedictory, it seems certain, was directed at Secretary Harriman. There are reports stronger than the rumor stage that Harriman favors an over-all business agency into which would be lumped administration and regulation of all transportation media.

TRUMAN BACKGROUND—It is pointed out that government aviation difficulties are not new to President Truman. He participated actively in framing the Civil Aeronautics Act. In the Senate he had a ringside seat to the Air Safety Board feuding and the subsequent Executive Order changing the framework of the aviation agencies.

Harriman has powerful influence in business (and this is a presidential election year) and at the White House. If he has succeeded in enlisting the President's aid for his over-all transportation agency, Truman has a precedent, and a first-hand knowledge of how to proceed.

Although he has not expressed it even privately, Landis must have reason to feel that Harriman is winning.

Some major airlines did not want Landis re-appointed; Board members, State Department, Commerce are just as happy he has been dropped. But shrewd observers are convinced that those could be circumstances or excuses —not reasons. They feel that the real issue was CAB independence and that that issue now is being settled—in Harriman's favor.

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NEWS DIGEST

DOMESTIC

Boeing Airplane Co. has merged its wholly owned subsidiary Boeing Aircraft Co. into the parent organization to simplify its corporate structure. William M. Allen, president, and officers remain virtually unchanged, having been substantially the same in both companies.

Dr. Craig Taylor, University of California (LA) physiologist, has demonstrated humans can survive 14½ min. in 250 degrees (F) or 38 degrees above boiling point. Tests indicate friction heat in speedy jet planes may be less serious problem than heretofore believed.

Air Force personnel now number 335,000 and anticipate a 401,000 total by June 30. Personnel total stood at 301,000 in June, 1947.

FINANCIAL

Navy Bureau of Aeronautics has taken possession of the $80,000,000 aircraft engine factory at Kansas City, Mo., operated during the war by Pratt & Whitney division, United Aircraft Corp.

Northwest Airlines declared a dividend of 28¾ cents a share on 390,000 shares of 4.6 percent preference stock. The dividend, which totals $112,125, is payable Feb. 1 to holders of record Jan. 16.

Fairchild Aircraft, Ltd., Longueuil, Quebec, is being voluntarily liquidated, according to Toronto sources. Several offers have already been received for the plant and equipment. Company designed and built the husky single-engine freighter, the future of which is under negotiation.

FOREIGN

Danish Airlines has inaugurated a Marseille - Geneva - Frankfort - Copenhagen service on a once-weekly basis. The new service uses Douglas DC-3 transports. Connections are available at Geneva with Danish lines serving Rome, Athens, Istanbul, and Ankara and at Frankfort with the Danish line to Zurich.

Lombardy Airport, composed of three former military airfields 30 miles from Milan, Italy, has been opened to airfreight traffic. Biweekly freight service is now in operation at Turbigo Airport, one of the three fields, which contains 2,470 acres and a main landing strip of thick gravel 3,250 ft. long. About 25 daily aircraft movements can be handled with present facilities at the field.

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Vol. 48, No. 2

AVIATION WEEK

Jan. 12, 1948

President's Rejection of Landis Brings Widespread Criticism

CAB chairman issues statement as he leaves to become associate of Joseph P. Kennedy; Commerce and State Department hands seen in White House action.

By CHARLES L. ADAMS

Reason for President Truman's curt refusal to reappoint James M. Landis as chairman of the Civil Aeronautics Board continued to get top industry attention last week as possible nominees for the two board vacancies advanced into and out of the limelight in puppet-fashion.

Rejection of Landis, who was appointed to CAB by President Truman in June, 1946, to fill the unexpired term of L. Welch Pogue, brought a rash of protest. The criticism, while centering on the President's action, also tended to reflect on moves, later abandoned, to push Stanton Griffis, investment banker and ambassador to Poland, as Landis' successor.

▶ **No Thanks**—The White House announcement was in the form of a bare statement that Landis would not be reappointed. Contrary to custom, there was no expression of thanks for services rendered.

The major airlines, with the exception of TWA, had been fighting Landis' reappointment for months (AVIATION WEEK, Jan. 5). The chairman also had stirred up antagonism in the Commerce and State departments.

▶ **Job Unfinished**—Landis badly wanted reappointment. He felt that he should not leave unfinished his work on airline safety, airfreight routes and tariffs, the Pan American domestic route case, mail rate issue and the freight forwarder situation.

At most, Landis had 72 hours' notice of the President's intentions. When the CAB chairman visited the White House earlier in December, the President indicated he wished Landis to remain with the Board. Minority Leader Sam Rayburn also visited President Truman in December and reported back to Landis that he would be nominated for another term.

▶ **Strong Opposition**—Airline opposition to Landis was based on a variety of factors. The Chairman's safety ideas, if adopted, will prove costly. He opposed retroactive mail pay which the carriers sorely need and was openly critical of airline management's financial planning in the postwar period.

Further, he was inclined to open the cargo field to new carriers and the freight forwarders. His attitude on temporary exemption of uncertificated lines brought strong opposition from the Air Transport Association.

▶ **Scores PAA**—Pan American Airways opposed Landis on two grounds. The chairman had given damaging testimony against the Community Company bill before Congress. Landis also scored PAA for spending large sums to line up public opinion behind its bid for domestic routes.

Secretary of Commerce Harriman and at least one of his top aides reportedly were backing Griffis to succeed Landis. Commerce officials have been sensitive to Landis' blunt criticism of the Civil Aeronautics Administration—a Commerce Dept. agency. Landis also fought for CAB independence, while Harriman has expressed a desire to obtain more responsibility for civil aviation policy and to bring the Board under the Commerce Department's wing.

▶ **Statement Issued**—Some State Department officials were said to be nettled by Landis' important role in negotiating bilateral air transport agreements in South America. Landis also made a

Press Protests Landis Ouster

Three of the four Washington, D.C., newspapers criticized editorially President Truman's decision not to reappoint James M. Landis as CAB chairman.

• **The Washington Star** under the heading **"The Landis Ouster"** said: "Presumably the President decided not to reappoint James M. Landis as chairman of the Civil Aeronautics Board because of dissatisfaction with the manner in which Mr. Landis has met his responsibilities in that post. If this is so, however, the manner in which Mr. Truman has dispensed with the services of Mr. Landis is subject to criticism on two counts.

"The first is the President's failure to set forth any reason for the Landis dismissal. Here is a man who has been on the firing line as a champion of the public interest in the development of civil aviation. He has frequently crossed swords with powerful interests in the aviation industry. One thing is clear: This studied silence on the President's part is going to feed the suspicion that the official demise of Mr. Landis has been brought about by pressure from interests which are not necessarily identical with the public interest, and which may very well be hostile to it.

"The second basis for criticism of Mr. Truman has to do with the manner in which the ax was applied to Mr. Landis. It is surprising, to put it mildly, that the President should see fit to oust this man from public service without a word of commendation or appreciation for the things he has done and has tried to do."

• **The Washington Post**, under the heading **"Presidential Ingratitude,"** said: "The ungracious way in which President Truman terminated the tenure of James M. Landis as chairman of the Civil Aeronautics Board is an object lesson in how not to attract and keep good men in the government."

• **The Washington News**, under the heading **"Why Was Landis Fired,"** said: "We don't know why President Truman fired James M. Landis as head of the Civil Aeronautics Board. But with the government so greatly needing good men, and finding them so hard to get, we think Mr. Truman owes the public—as well as Mr. Landis—an explanation of why he has let a good man go."

trip to London to obtain reaffirmation of Great Britain's adherence to the Bermuda principles.

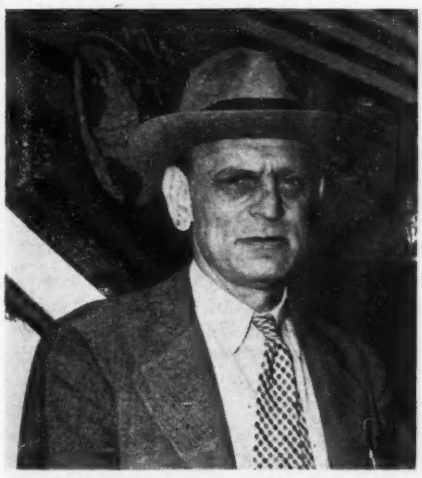
In his statement on leaving the CAB chairmanship, Landis declared: "I have only this comment to make about my differences with other members of the government. I have a firm conviction that the development of this country's air potential requires an independent CAB, free of domination by other transportation and financial interests and stifled by no monopoly.

► **Private Enterprise**—"Aviation will not grow as a private enterprise unless forces of competition are given full play and unless opportunities are created for the infusion of new men, like the returning GI's, with new ideas. Aviation needs even more a sincere effort to solve the problem of air safety, whatever its costs, if it hopes to survive as a passenger-carrying business."

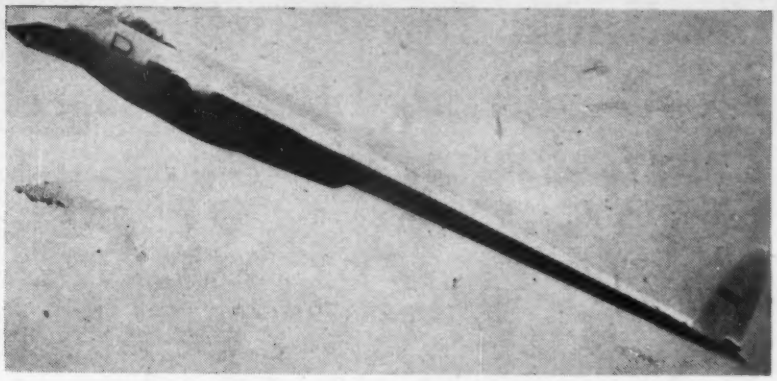
Landis stated that after a vacation he would become associated with Joseph P. Kennedy, financier, former ambassador to Great Britain, and Landis' predecessor as chairman of the Securities and Exchange Commission. In his association with Kennedy, Landis will be making his first entrance into private business.

► **Three Members Left**—CAB was left with three members as a result of Landis' departure. President Truman has reappointed Oswald Ryan, a Republican, as vice chairman. Reports of member Harllee Branch's retirement have been numerous, but early this month he announced plans to remain with the Board "for the time being."

Member Josh Lee has been interested in gaining the Democratic nomination for Senator from Oklahoma, a post he held before being appointed to CAB. But with two popular vote-getters already in the race, Lee has as yet not announced his candidacy.



James Landis, former Civil Aeronautics Board chairman, now "private citizen," will be associated with Joseph P. Kennedy, following a short vacation. (For a commentary on the Landis case, see The Aviation Week, page 7.)



BRITAIN'S JET 'FLYING WING' FLIES

Britain's contribution to flying wing aircraft, the Armstrong-Whitworth AW-52, is shown during its first public test flight. The craft climbs at 4,800 ft. per min., and cruises for 1,500 miles at 330 mph. at an altitude of 36,000 ft. The wings, swept at an angle of 25 d., have a span of 90 ft. (Press Assn.)

Canadair DC-4M2 Equals "Specs" in Tests

Canadair DC-4M2 has completed all tests required for approval of the plane by the Canadian Department of Transport and has equaled or exceeded its original specifications. The four-engined (Rolls-Royce Merlin 620 of 1,725 hp. for takeoff) transport has demonstrated a top speed of 345 mph. at 68,000 lb. gross weight and 333 mph. at 80,000 lb. gross weight.

The 40-passenger transport has a maximum range of 4,060 miles at 10,000 ft., range of 2,885 miles at 10,000 ft. with maximum payload of 14,758 lb., maximum range at 23,000 ft. of 3,715 miles and range of 23,000 ft. with maximum payload 2,600 miles. CAA take-off running length is 5,000 ft. and landing runway length required is 4,600 ft. Rate-of-climb at 80,000 lb. gross weight at sea level is 960 ft. per min. and at 20,000 ft. is 640 ft. per min. Service ceiling at 80,000 lb. gross weight is 26,700 ft.

The DC-4M2 is in quantity production at the Canadair plant near Montreal with five already in service with Trans-Canada Air Lines. Production is planned to reach a maximum output of eight-ten transports per month this spring.

NATS Makes New Safety Record in 1947

A full year's flying without a passenger fatality was completed on Jan. 1 by the Naval Air Transport Service commanded by Rear Admiral John W. Reeves, Jr. This compares with NATS 1946 safety record of 1.8 fatalities per 100 million passenger miles. Domestic civil airlines had a safety record of 1.6 fatalities per 100 passenger miles in 1946 and an estimated 5.2 for 1947. One NATS crew member was killed in 1947.

NATS, which is engaged in a top level battle with the Air Force Air Transport Command for survival under the Armed Services Unification Act, rang up a 98 percent record on scheduled plane miles completed and flew all but 5 percent of its regularly scheduled flights. Approximately 11 percent of NATS flights were delayed for an average of 2.8 hours.

With a fleet of 116 airplanes including DC-3, DC-4 and Martin Mars types, NATS flew 495,893,175 passenger miles; and 44,992,067 ton miles of mail and cargo. Total of 230,776 passengers were carried including 8,254 hospital patients. NATS load factors averaged 83 percent and aircraft utilization ran 6.8 hours per day for DC-4; 2.4 for DC-3 and 8.5 for Martin Mars flying boats.

Transocean Contracts

Transocean Air Lines, Oakland, Calif., has renewed subcontract with Trans-Canada Airways, prime contractor with the Canadian government, for mass flight of emigrants from Britain to Canada, and expects to fly approximately 8,000 persons across the Atlantic, in the first half of 1948. Transocean reports it has already flown more than 6,000 persons across in the past six months, under a similar contract. Approximately 20 flights a month will be made during the winter season with frequency increased to 40 to 50 flights every four weeks, thereafter. The contract is described as setting a new record for mass movement of civilians by air.

Transocean also has a contract with the U. S. Army Engineers for trans-pacific movement of personnel and workers in construction jobs at bases including Guam and Okinawa.

Presidential Air Safety Board Urges Accelerated Fire Research

Final report proposes airline safety directors, better crew training, less maintenance red tape; ALPA and ATA file dissents on particular sections of report.

By ROBERT HOTZ

A broad program for increasing airline safety was offered by the President's Special Air Safety Board in its final report to President Truman. Filing the report was also one of the last official acts of former Civil Aeronautics Board Chairman James M. Landis, who also headed the Safety Board.

Principal points in the 115-page report called for accelerated inquiry into all phases of the fire problem; appointment of full-time airline safety directors; better training for mechanics and co-pilots; freedom of airline maintenance inspectors from maintenance supervisors; increased research funds for civil aviation and requiring non-scheduled air carriers to meet the same safety standards as scheduled airlines.

▶ **Praise Safety Record**—The report praised the safety record of the U. S. scheduled airlines as "eminently commendable" but warned that the value of centralization for the planning and providing for safety had been proved in municipal governments, private industry and other forms of transportation urging the airlines to follow suit.

Although there was unanimous agreement on the numerous board recommendations issued in five previous reports to the President both Air Line Pilots Association and Air Transport Association representatives took issue with particular sections of the final report. H. B. (Bart) Cox, ALPA representative, took issue with a recommendation that disputes over pilot proficiency be submitted to arbitration as soon as possible. The report noted that these disputes effect morale and safety. Airline grievance procedures have been the principal issue involved in recent labor disputes between ALPA and American Overseas, National and United Airlines which resulted in one strike and another strike vote. Cox will submit a minority report on the grievance problem.

▶ **Arnold Dissent**—Milton W. Arnold, ATA vice president-operations, submitted a ten page minority report that charged the board with confusing purely economic issues with safety and dealing with other matters that were properly within the scope of the President's Air Policy Commission and the Congressional Air Policy Board. Arnold warned that government agencies must avoid giving the public the impressions that "great and immediate" safety improvements can be made through investigations and organizational changes.

He asserted that the principal fault in commercial aviation was its complexity and there were no prospects for simplification for several years due to the still developing sciences of electronics, communications and metallurgy which will further complicate the airline safety picture. Arnold also charged that while government agencies advocated placing greater responsibility on the airlines, there has been no evidence of concrete moves to do so and most legislative proposals still require increasingly detailed governmental regulation and supervision.

New ACC Head

William C. Foster, Under Secretary of Commerce, has been named chairman of the Air Coordinating Committee succeeding Garrison Norton, Assistant Secretary of State for Air. The appointment is said to indicate an increasing emphasis on domestic air commerce in the committee's activities.

Meanwhile recommendation that an independent permanent chairman of the ACC be named as a Presidential appointment, serving as a member of the White House staff, was made in the current issue of Northwestern University's Journal of Air Law and Commerce. The recommendation was made by George A. Brownell, wartime executive officer to the Assistant Secretary of War for Air, who wrote that the Air Coordinating Committee might have done alone the report assigned to the President's Air Policy Commission "if it had the prestige and strength which its position and importance deserves." He urged "revitalization" of the ACC and administrative steps to increase its usefulness.

Following are the principal recommendations of the final report:

- **Increased efforts** should be devoted by NACA to developing a fuel having better safety features than the high octane aviation gasoline now used. Arnold charged that the public has been given a false impression of safety fuels already developed and that these fuels do not offer any real advantages for all types of aircraft operations.
- **Noninflammable hydraulic fluid** and lubricants should be developments.
- **Existing types of smoke** and fire detectors must be improved. Detectors now used tend to give false indications on the presence of fire. These fake warnings induce additional hazards by stimulating emergency landings under bad conditions and reduce pilot confidence in the genuine fire warnings.
- **Improved electrical installations** are necessary. Many defects have been discovered in electrical systems of post-war transports. Airlines should organize their maintenance departments to include personnel competent in this field.
- **Improvement in fire** extinguishing agents is necessary. Extinguishing tests now under way at CAA's Indianapolis Fire Tunnel should be given top priority.
- **Better indoctrination** of airline flight crew in methods of fighting various types of fires that may be encountered.
- **Increased compartmentalization** of fire hazard areas to confine fires to single areas is necessary. Aircraft compartments inaccessible to crew members in flight should have inspection windows and crews should be equipped with fire axes and other equipment necessary to supplement automatic fire fighting equipment in these areas.
- **Faster action** on pilots' complaints on malfunctioning aircraft by airline maintenance crews.
- **Decrease in detailed** maintenance inspections by CAA to allow properly qualified airlines to handle their own maintenance inspection.
- **Inspection activities** of airlines should have an increased degree of autonomy from the departments which they inspect and conflicts between inspection and maintenance should be dealt with at the top level of airline management.
- **Standardization of maintenance** procedures and forms already under way on the airlines should be encouraged.
- **Tests should be perfected** to provide uniform and accurate determinations of pilot proficiency.
- **Airlines should create** positions of safety director at a sufficiently high management level to enable proper observation, analysis and planning to achieve higher degree of safety.
- **Better facilities** should be provided for on the job training of co-pilots. Co-pilots are not generally given sufficient

opportunity to make landings, and take-offs and fly under instrument conditions to maintain or increase their proficiency.

• **Airlines should review** the ratio of base pay to flight pay to determine that pilots are given sufficient base pay to eliminate incentive to earn flight pay by cutting safety margins.

• **Provision of satisfactory retirement** and pension plans for airline pilots will help to improve and maintain morale and thus promote efficiency and safety.

SKYROCKET PILOT

John Martin, 40 year old Douglas test pilot, will fly the Navy's D-558-2 on its initial tests. Martin will fly phase one tests after which the plane will be turned over to the Navy and the National Advisory Committee for Aeronautics for supersonic research.

House Group Planning Probe on Service PRs

House Appropriations Military Subcommittee, headed by Rep. Albert Engel (R., Mich.), plans to turn the spotlight on Army and Air Force expenditures for public relations activities.

Six investigators are now doing groundwork. Their findings will be in the hands of the subcommittee by the time hearings on the 1949 fiscal year military appropriations bill gets under way. Air Force and Army officers appearing before the group will be called upon to justify current year public relations outlays and disclose, in detail, plans and costs for coming year activities in this field.

► **Want Facts**—"We want to know exactly how much taxpayers' money the Air Force and Army are spending for public relations and propagandizing," Engel told AVIATION WEEK. "I think it is entirely too much, and this type of activities certainly can be cut down without interfering with the national defense an iota."

The subcommittee's interest in military "propagandizing," Engel said, was first roused by the Army's large-scale promotional activities in connection with universal military training, a proposal now pending before Congress. Dubbing UMT promotion by the military "illegal," the Michigan congressman declared, "The services are not authorized to use funds from the public treasury to pressure Congress. We want to find out, not only the whys and wherefores of the Army's propagandizing for universal military training, but also whether the Army and Air Force are engaging in any other illegal propagandizing to influence congressional action. There seems to be some reason to believe that the services have financed pressure to increase their appropriations from Congress."

► **Cites Difficulties**—Engel commented that "it is extremely difficult to trace Army and Air Force public relations expenditures since they are drawn from innumerable accounts." He indicated that his subcommittee would consider requiring the services to segregate public relations funds. This is required of the Department of Interior and other government departments whose promotional activities to pressure Congress have antagonized congressmen at one time or another.

Navy Orders 1,632 New Planes

Bulk of 1948 contracts call for propeller-driven planes of conventional design; few jet orders.

Navy Bureau of Aeronautics has placed procurement contracts with eleven aircraft manufacturers for the production of 1,208 aircraft during 1948 and has already announced contracts with eight manufacturers for the delivery of 424 aircraft during 1949. These latter are only initial orders to be augmented later in the year.

Of the 1948 total, 95 percent are conventional propeller-driven craft of early wartime design which were in production during the last two years of the war. This near-total procurement of reciprocating types (only 60 jet airplanes are scheduled for production this year) points up the Navy's continued reliance on service types already well integrated into the carrier divisions of the fleet as the best compromise between combat efficiency and economy. By introducing jet types in service slowly, the Navy believes it can maintain training, maintenance and operational expenses for naval aviation at a minimum.

Slated for steady production through 1948 are:

• **Chance Vought F4U-5 Corsair** — This new model of the wartime Corsair features a top speed increasing towards the 500 mph. mark, simplified functional cockpit and improved power plant and cowling. A total of 258 are scheduled for production during the year, maintaining the 21 airplanes per month already being delivered.

• **Grumman F8F-1 Bearcat**—Navy will buy 300 of the new F8F-1 model featuring 20 mm. cannon armament and new power plant design placing the stubby craft in the 500 mph. top speed class.

• **Grumman F9F-2 Panther**—Production contract for 100 of these new jet fighters will deliver only 12 airplanes during the year with the remainder scheduled for 1949. Fighter features interchangeable Pratt & Whitney Nene and Allison turbojet engines. High top speed near 650 mph. and a landing speed of only 85 mph. are new Navy jet performance records.

• **North American FJ-1**—Remainder of order for 30 of these axial-flow turbojet-powered fighters are due for completion during the year, a total delivery of 12 airplanes. Type has passed Navy tests at Patuxent but only service test quantity has been ordered.

• **McDonnell Jet Fighters**—Completion of current order for 60 FH-1 Phantom fighters is scheduled during the year, a total of 29 airplanes. Coming into production is the larger F2H-1 Banshee. Of an order for 56 planes, seven are scheduled for delivery this year.

• **Douglas AD-1 Skyraider** — War-designed and produced, this single-seat attack plane is powered by a Wright R-3350 reciprocating engine of 2,500 hp. and is designed to carry a variety of rockets, bombs, torpedoes and chemical tanks externally. A major feature are fuselage dive brakes designed to retard airspeed in long dives. Current production rate of about 25 airplanes per month will continue throughout year with 279 scheduled for delivery.

• **Martin AM-1 Mauler** — Companion plane to the Skyraider but with a 3,500 hp. Pratt & Whitney Wasp Major engine, this single-seat attack plane underwent design modifications which delayed its originally scheduled deliveries to the Navy. Now accelerating to 15-per-month rate, Martin will deliver 163 during 1948 completing the total contract for 178 aircraft plus the original XTBM-1 prototype.

• **Lockheed P2V Neptune**—Production version of the record-breaking "Truculent Turtle," a total of 70 of these fast, heavily-gunned patrol bombers will be delivered during the year, bringing to 105 the total accepted by the Navy.

• **Martin PBM-5A Mariner** – Amphibian version of the wartime patrol bomber, this giant craft is now being delivered at the rate of two per month with 24 scheduled for completion during the year.

• **Sikorsky HO3S Observation Helicopter**—This four-place standard Sikorsky design will continue in production throughout the year with 21 slated for delivery.

• **Piasecki HRP Transport Helicopter**—Giant 10-passenger twin-rotor design is now being delivered to the Navy with 24 scheduled for acceptance this year of a total order for 40.

• **Bell HTL Training Helicopter**—Final quantity of nine of this Air Force-developed type, to be produced during the year, will complete the Navy's order for 22 arranged through the Air Force.

Bureau of Aeronautics procurement plans for 1949 remain tentative pending final appropriations determinations during the current Congress. Navy has already obligated funds provided for the purpose for continuation in production of the majority of aircraft slated for delivery during this year. Two new types, Vought F6U and Martin P4M, will go into production.

Airpower Based on Obsolete Types

Aircraft Industries Association study shows 90 percent of service planes out of production.

Of an approximate total of 30,000 military airplanes now on hand in the Air Force and Naval Aviation, more than 90 percent are wartime types out of production since V-J Day. Of this total, 15,000 are in operation and 15,000 are in storage or awaiting salvage. These planes comprise 79 different types of which only 25 are currently in production and only 39 in operational use, according to a study submitted to the Congressional Air Policy Board by Aircraft Industries Association.

Since V-J Day the aircraft industry has developed 29 new experimental aircraft types of which eleven have been placed in production. This production varies from as few as seven (Martin P4M) to as many as 610 (Republic P-84) with the majority only limited service test quantities.

Aircraft types are evenly divided between the services. The Navy has 40 major types of which 19 are in use but out of production, seven are in production but not yet operational, seven are both in production and in operation, five are experimental and two are special research airplanes. Air Force has 39 major types of which eight are in use but out of production, six are in production but not yet operational, five are both in production and in operation, 16 are experimental and four are special research types of aircraft.

• **Types in Use** but out of production:

Air Force—Boeing B-29 Superfortress, Republic P-47 Thunderbolt, North American P-51 Mustang, Northrop P-61 Black Widow, Douglas C-47 Skytrain, Douglas C-54 Skymaster, Northrop F-15 Reporter and Bell YR-13 Helicopter.

Naval Aviation—Grumman F6F Hellcat, Grumman F7F Tigercat, Vought F4U-4 Corsair, Curtis SB2C Helldiver, Grumman TBM Avenger, Convair PB4Y Privateer, Convair PBY Catalina, Martin PBM Mariner, Lockheed PV-2 Harpoon, Stinson OY-1 Sentinel, Curtiss SC-1, 2 Seahawk, Douglas R5D Skymaster, Curtis R5C Commando, Douglas R4D Skytrain, Lockheed R5O Lodestar, Martin JRM Mars, Sikorsky HNS, Sikorsky HOS, and Bell HTL Helicopters.

• **Types in Use** and in production:

Air Force—Lockheed P-80 Shooting Star, North American P-82 Twin Mustang, Republic P-84 Thunderjet, Fairchild C-82 Packet and Boeing C-97 Stratocruiser.

Naval Aviation—Grumman F8F Bearcat, McDonnell FH-1 Phantom, Vought F4U-5 Corsair, Lockheed P2V Neptune, Douglas AD-1 Skyraider, Sikorsky HO3S and Bell HTL-2.

• **Types in Production** but not yet operational:

Air Force—Northrop B-35, Convair B-36, North American B-45, Boeing B-50, North American P-86 and Fairchild C-119.

Naval Aviation—Vought F6U Pirate, McDonnell F2H Banshee, North American FJ-1, Martin AM-1 Mauler, Martin P4M Mercator, Martin PBM-5A Mariner, Piasecki HRP Rescuer.

• **Experimental Airplanes** in flight status:

Air Force – Curtiss-Wright XP-87, McDonnell XP-85, Convair XP-81, Northrop XP-79, Douglas XB-43, Convair XB-46, Boeing XB-47, Martin XB-48, Northrop YB-49, Convair XC-99, Hughes XF-11, Republic XF-12, Kellett XR-10, Bell XR-12, and Bell XR-15.

Naval Aviation – Grumman XF9F, Vought XF5U, EDO XOSE-1, 2, Lockheed XR60-1, Constitution and McDonnell XHJD-1 Helicopter.

• **Research Airplanes:**

Air Force – Bell XS-1, Bell XS-2, Douglas XS-3 and Northrop XS-4.

Naval Aviation – Douglas D-558-1 and Douglas D-558-2.

Luscombe Has New 85-90 Hp. Models

Pricetags beginning at $2,595 flyaway Dallas are announced on a line of four 1948 all-metal Luscombe Silvaire two-place personal planes with 85 hp. and 90 hp. Continental engines.

Deliveries of two of the planes, the Standard 85 ($2,595) and the Special 85 ($2,795) are now under way. Deliveries on two 90 hp. models, the Master 90 ($3,095) and the DeLuxe 90 ($3,595) are due to start Jan. 15. Special introductory prices on the 90 hp. models of $2,995 for the Master and $3,495 for the DeLuxe will be in effect until midnight Feb. 29, President Leopold H. P. Klotz announced. Introductory prices are the same as those for the 1947 Master 85 and DeLuxe 85 Silvaires.

Prices on the 85 hp. models are the lowest ever offered on 85 hp. all-metal personal planes, President Klotz stated. (Price of 1948 85 hp. Cessna 120 two-placer remains unchanged from 1947 at $2,845 flyaway Wichita.)

Most important design changes on the 1948 Luscombe two-placers is the new Silflex landing gear, made of tapered steel tubing, and with hydraulic shock absorbers attached. Gear is covered with fairing, so plane's general contour is little changed from 1947 models.

Other features cited are new auto type de luxe instrument panels for higher priced 85 and 90 hp. models, with special attention to interior styling; gloss gray finish instrument panels for standard and master models. Replacement of fuselage fuel tank, with wing tank, in standard plane.

Performance figures quoted are: for 85s, cruising speed 112 mph., rate of climb 800 ft./min. and ceiling, 16,500 ft.; for 90s, cruising speed 115 mph., rate of climb, 850 ft./min., and ceiling 17,000 ft.

Announcement makes no mention of the 65 hp. Luscombe Silvaire trainer, previously priced at $2,495 with a short time special of $2,295 last fall, and presumably this plane is not currently in the Luscombe line. The 165 hp. four-place Silvaire Sedan, pricetagged at $6,995 flyaway, completes the Luscombe personal plane line. Delivery date on the four-placer has not yet been announced.

Helicopter Planting

First use of a helicopter for treeplanting, on a commercial scale, is reported from Washington, where a Central Aircraft Co. Bell helicopter started to seed 1,000 acres in the Columbia tree farm of Crown Zellerbach Corp., near Vernonia, Ore. The helicopter used an adjacent farmyard as its operating base for reloading to sow the seed at the rate of ¾ lb. to the acre. The operator has contracted to seed 2,640 acres in four of the corporation's tree farms in Oregon and Washington. Last year Central Aircraft had a similar contract but used a conventional airplane for the work.

Seek Air Academy

The powerful Texas delegation is making a drive to have Randolph Field established as the nation's air academy, equal in status with West Point and Annapolis.

Sen. Tom Connally (D., Tex.) has followed Rep. Paul Kilday (D., Tex.) in introducing legislation authorizing academy status for the field.

Legislation requested several years ago by the Navy, authorizing a $12 million development of aviation facilities at Annapolis, is pending before the Senate Armed Services Committee. It was introduced in this Congress by the committee's chairman, Sen. Chan Gurney (R., S. D.).

AVIATION CALENDAR

Jan. 7-30. Air Transportation Institute, American University, Washington, D. C.
Jan. 13. ICAO statistics division. Montreal.
Jan. 12-16. Society of Automotive Engineers annual meeting, Book-Cadillac, Detroit.
Jan. 15-18. Southeastern soaring contest, Sanford, Fla.
Jan. 26-28. CAA non-scheduled operators of region four, Fort Worth.
Jan. 26-29. 16th annual meeting, Institute of the Aeronautical Sciences, Hotel Astor, New York.
Jan. 26-30. American Institute of Electrical Engineers, Pittsburgh.
Jan. 27. American Road Builders Association, airport division, Washington, D. C.
Mar. 8. ICAO maps and charts division, Brussels.
Mar. 22. ICAO aeronautical maps and charts division, Brussels.
Mar. 26. National Flight Propulsion meeting, Institute of the Aeronautical Sciences, Hotel Carter, Cleveland.
Mar. 30. ICAO personnel licensing division, Montreal.
Apr. 1-3. American Institute of Electrical Engineers, Des Moines.
Apr. 4-8. American Association of Airport Executives, Congress Hotel, Chicago.
Apr. 20. ICAO rules of the air and air traffic control division, Montreal.
Apr. 27. ICAO facilitation division, Europe.
June. Second ICAO assembly meeting, western Europe.
July. International Air Exposition, Idlewild Airport, New York.
July 15. Ninth annual meeting, Airline Advisory Board, Kansas City, Mo.
Sept. 3. International Aeronautic Federation, Cleveland.
Sept. 8. ICAO operations division, Montreal.
Sept. 21. ICAO airworthiness division, Montreal.

INDUSTRY OBSERVER

► **First McDonnell XP-85 parasite fighter is now undergoing full-scale wind tunnel tests at the NACA Ames Aeronautical Laboratory at Moffett Field, Calif. The tiny fighter was placed aboard a Boeing C-97 Stratocruiser and flown from St. Louis to the laboratory. Second experimental airplane will be flown direct to Muroc Air Base, Calif., for first flight drop from B-29 bomber.**

► Navy acceptance tests of North American XFJ-1 jet fighter are virtually complete following extensive flight tests of several of the barrel-shaped craft at N.A.S. Patuxent. A service test order for 20 is now nearing completion at North American Aviation's Inglewood, Calif., plant.

► **DeHavilland has named its DH-106 jet airliner, now nearing completion, the Comet, after the famous London-Melbourne racer of a decade ago.**

► Air Force has revealed that a "de-mothing" operation on 350 tactical aircraft, made up of 160 North American B-25 bombers, 130 Douglas C-47 transports and 60 Republic P-47 fighters, costs $1,338,000. In addition, annual operation and maintenance of these aircraft costs $13,765,000. Thus, the total cost of taking these aircraft out of storage and operating them for 30 hrs. monthly for a year costs about $15,000,000.

► **A "fantastically inaccurate" Air Force map led to the recent B-29 crash against an unplotted mountain 95 miles north of Nome, Alaska, according to Brig. Gen. Frank F. Everest, who directed rescue operations. Gen. Everest revealed that no elevation figures whatsoever appeared on the spot where the bomber hit a 1,400-ft. mountain. The craft was attached to the 72nd Reconnaissance Squadron, which is mapping the region to correct such topographical inaccuracies.**

► DeHavilland Aircraft of Canada Ltd., Toronto, shows a net loss of $616,014 for year ended Sept. 30, 1947, compared with net earnings of $143,347 in the previous year. Working capital of $1,202,189 compares with $1,812,655 the previous year. Current assets of $1,560,249 consist mainly of inventories totaling $1,272,-163.

► **British have developed a new extinguisher for aviation gasoline fires—methyl iodide. It is supposed to be non-toxic and four times as effective as carbon tetrachloride.**

► Vickers expects to test fly its turbo-jet, 32-43 passenger airliner, the Viscount, early next summer. It will be powered by four Napier Naiads with a total of 6,000 hp. plus 960 lb. static thrust.

► **Airlines are co-operating with the National Advisory Committee for Aeronautics in a new gust load research program. V-G recorders are now carried in airline DC-4, DC-6 and Constellations to gather data for the NACA study.**

► Flight tests have been conducted by Air Material Command at Wright Field on a new all-metal helicopter blade containing provisions for thermal anti-icing. Tested on a Sikorsky R-5, the new blades are of stainless steel construction providing increased fatigue resistance, better balance and lightness. Manufactured by Goodyear Aircraft Corp., the blades are designed for installation on Air Force Sikorsky equipment with other designs now under study. Six sets are being delivered to the AMC propeller laboratory.

► **Combustion research unit for use in studying guided missiles will be installed at the Bell Aircraft Corporation plant in Niagara Falls by the Navy Department.**

LETTERS

Navy News Coverage

To the Editor:

This office greatly appreciates your coverage of naval aviation in your last two issues (Dec. 8, 15). Your editorial on the Naval Air Transport Service, I thought, was one of the best that appeared.

L. C. SIMPLER, Capt.,
Office of Public Relations
Department of the Navy

Angry Instructor

To the Editor:

Having made flight instruction my livelihood since 1941 and having enough diversified time flying all types of airplanes since the prewar period, it would appear that I may fall into the category of "experienced pilots," one, I will add, that has followed with great interest and some misgivings the lively editorial and reader discussion concerning the latest cure-all for private flying, your precious stall warning indicator.

Now in all sincerity and fairness to the device, it doubtless has its good points, but when it occasions editorial comment to the effect that all private pilots and instructors who refuse to accept this bonanza as the panacea for all the ills of private flying are either mentally deficient or proud, irresponsible prima donnas, it's high time for one of us mentally deficient instructors to speak up.

If the device has true merit, it will undoubtedly find its place in the industry, over the objection of all the old experienced though idiotic pilots and flight instructors. In the meantime, it would seem that anyone even remotely familiar with the accident prevention picture in private flying should realize that there are three major nuclei from which nearly all private pilot accidents stem.

There is the continual avowal, if not actual belief, by manufacturers and operators alike, that any damn fool who can move can learn to fly in a few short, inexpensive lessons, following which he will find himself a competent pilot, spending week-ends in Havana or Montreal with the casualness of a subway commuter. This line of sales appeal while sounding very alluring is sheer nonsense, since anyone in a position to know realizes that it takes several hundred hours and considerable conscientious practice for one to become reasonably competent under good flying conditions.

Secondly, the industry either can not or will not produce a truly stall and spin proof aircraft for the popular purse. As one instructor was overheard to recently remark, "Yes, madam, this airplane is fool proof but not damn fool proof." And until they build them that way you are going to have stalls as well as other accidents. Your four-wheel brakes have not seemed to make even a slight dent in our appalling highway death toll.

And, finally the attitude of the average student towards adequate dual instruction is frightening. It amounts to this: "Solo me in the shortest possible time and get out of my way, this is kid stuff." So we have another 8 to 10 hour wonder flopping all over the sky—an accident going somewhere to happen.

Trying to sell a solo student additional dual is as difficult as selling him an airplane; sometimes more so. About all even a good instructor can do with most students is to forcibly demonstrate to him that a factor as simple as speed (airspeed) itself is all that keeps him and the airplane from falling like a lump of clay, and that in various altitudes that speed will vary, but that there is a definite minimum below which he will stall. And incidentally, that minimum can generally be indicated on a device commonly known as an air speed indicator, the existence of which you ignore in your editorials.

If you care to take the position that an air speed indicator is an unreliable device, especially on some of the lowest priced lightplanes, you still must convince many of we deadheads in the industry that your gadget is any more reliable than any other mechanical contrivance.

Whether your stall warning indicator becomes universally accepted will, it seems, depend largely on its actual value to the flying public and not on over-enthusiastic editorials and sales talk, liberally sprinkled with insults to some members of the profession.

Meanwhile, let the poor, deluded, subnormal flight instructor make up his own mind about your wonder device. He is still the most overworked, underpaid, ridiculed key man in your private flying picture today. Maybe, just maybe, he knows something about students and stalls that a certain editorialist does not.

ELVERON HOYT,
Private Pilot Examiner
Homewood, Ill.

LaGuardia Rescue Work

To the Editor:

I take exception to Mr. C. H. Tryon's letter in the Dec. 15 AVIATION WEEK. I do not agree with his report in full as airline employees participated in the rescue work (after the United crash at LaGuardia field last May) and did a very fine job. It was these employees who were the first to arrive at the scene of the disaster and attempted to get the door open so that passengers could be rescued.

The first to arrive at this scene were employees of American Overseas Airlines. I have written statements from these employees in my files on this accident. The management of AOA has just awarded the distinguished service awards to two employees who participated in this rescue. They are Oscar Kopnek and William Arnold.

Awards of valor are not given to any employe until it is proven they are worthy of same. As they suggested, in writing an article of this type it would be advisable to get the complete facts and also to contact those who participated in the rescue work. We at AOA have a fire brigade who come under my supervision. These brigade members are trained for aircraft fire fighting and rescue work. This is not the first time the AOA brigade members had performed rescue work at this field.

C. S. HAYWARD, Safety Engineer
American Overseas Airlines
New York, N. Y.

It Was A Franklin

To the Editor:

When this issue arrived (Dec. 15) I was greatly interested in reading the article (on the new Hiller helicopter) which I thought was very well done until I reached page 30 and read the caption under the center picture...Although the picture clearly shows a Franklin engine, this caption states that the engine is one manufactured by one of our competitors. Also, on page 26, under "Power Plant–Type," the model should be 6U4 instead of GU4, as it is shown...

C. H. BENNUM, Field Sales Manager
Aircooled Motors, Inc.
Syracuse, N. Y.

(Twice recently AVIATION WEEK *has done Aircooled Motors, Inc., injustice in misnaming engines. In one case information given by a plane owner, over the phone, to* AVIATION WEEK, *was incorrect. In the instance cited by Mr. Bennum the error was the reporter's.—The Editors)*

Inventor Disillusioned

To the Editor:

I have read your editorials on stall warning indicators with much more than passing interest because I too was once disillusioned by these "seat of the pants" pilots of whom Mr. Johnson speaks (Dec. 29 editorial page).

Several years ago I developed and built a stall warning indicator...I called it an angle of attack indicator because I felt that name might help to make and keep pilots conscious of the fact that stalls are caused by an excessive angle of attack and not by insufficient air speed. I put the indicator on a trainer type plane and gave it a thorough test. It proved to be even better than I had anticipated in every respect.

I was very sure I had something that would be a boon to the industry as well as to operators. To make a sad story short, after talking with nine operators and about 60 instructors, I decided to throw the whole thing in the ash can. Most of the operators liked the thing but were inclined to be influenced by the instructors who did not see anything to it.

Some even said it would be detrimental as students would soon come to depend on it. While this reaction did not dampen my enthusiasm for it, I could see that the selling job that would have to be done was one I did not care to take on at that time.

As a matter of actual fact, a good angle of attack indicator would make a lot of good pilots lose some of the confidence they have in the seat of their pants. How to make them see it, however, I would not know. It is editorials like yours that do the most good, so keep up the good work.

CALEB SMITH
Tucson, Ariz.

Harvard Report Gives Yardstick For Industrial Preparedness Plans

Study of World War II expansion, only now available to public, is valuable as a check list on present program.

BY WILLIAM KROGER

With substantial indications that the air industrial preparedness program, if not limping, has been greatly changed for what civilian planners do not feel is the better, industry this week was presented with a yardstick against which to measure both the state and the effectiveness of present air industrial preparedness measures.

It is the previously unpublished Harvard University study on expansibility in the aircraft industry which formed the basis for the Air Coordinating Committee's famous 1945 report on demobilization of the industry. ACC used a preliminary draft as its working paper, the complete Harvard document was submitted in January, 1946, and although presumably used by official planners since has only now been made available to the public under the title "Problems of Accelerating Aircraft Production During World War II" (Division of Research, Graduate School of Business Administration, Harvard University, Boston; $1.50).

The authors, Tom Lilley, Pearson Hunt, J. Keith Butters, Frank F. Gilmore and Paul F. Lawler, specifically disavow any intent of pointing the way for current industrial preparedness planners ("the authors were limited to a study of the past and did not receive authorization to express any opinions regarding . . . findings . . . of use in . . . the present and future").

▶ **Useful Conclusions** — Nevertheless, with civilian influence swept out of industrial planning activity at Wright Field, there is bound to be pertinence to today's problems in such conclusions of the report as:

• "**Pre-M-Day planning** of the services was largely based on out-moded concepts appropriate only under conditions of the past. . . .

• "**Unnecessary delays and needless** waste resulted from the failure of the government administrative machinery to implement properly and effectively the production goals . . .

• "**Government contributed** to the delays in the change-over to line production methods by (a) failing to plan carefully the introduction of design changes; (b) not reducing the number of minor differences between models; (c) setting the initial production goals . . . at levels far below those ultimately required; and (d) introducing an unnecessarily large number of schedule changes.

• "**The production record** . . . could have been improved by planning in advance for the use of outside industries —thus giving the managements of outside companies a rudimentary knowledge of aircraft know-how . . .

• "**The services** apparently made no reference to these plans (drawn up by Wright Aeronautical and Cadillac on request) when the war expansion actually took place."

▶ **Management Faults**—Those are only the outstanding errors and miscalculations made by the official end of the industry expansion program as catalogued in the Harvard study. Equally as delaying in the program were faults of the manufacturers:

• "**Conversion** from job shop to line production methods was delayed by (a) products that were not suitably designed for line production methods; (b) absence of production organization structures that could provide a better basis for expansion, particularly with reference to tool engineering; (c) lack of enough men possessing both aircraft production know-how and a background in the use of line production techniques; and (d) inadequate methods of handling manufacturing information, which failed to provide complete, accurate, and up-to-date descriptions of the product and of current manufacturing methods.

• "**Acceleration** of production was delayed by the failure to train industry personnel in peacetime to assume more responsible management positions [and] the strain on some managements caused by the operation of a number of branch plants.

• "**The production record** . . . could have been improved by relying on licensing more heavily, particularly for developed models for which adequate manufacturing information was available and giving subcontractors greater responsibility and larger units to produce."

The Harvard study is an interesting foot-note to the quasicritical comments of some industry executives before the President's Air Policy Commission on the subject of industrial preparedness planning. The burden of these men's remarks was that greater production contracts are more sorely needed than preparedness plans. The Harvard report, in commenting on the length of time that it took the industry to reach volume production after the "go-ahead" signal had been given, neatly sums up that attitude:

▶ **Lack of Orders**—"Of all the many facts which help to explain why the 500th B-17 was not delivered until April, 1942, none is more important that the simple fact that the first production contract for more than 25 B-17s was placed in June, 1940." (The fifth B-17 was accepted in 1937.)

In discussing engines, it is pointed out that the Wright R-3350 was begun in January, 1936, the military type test was passed in January, 1938, but because of lack of interest on the part of the services, the project was shelved. "Later, when the B-29 program needed the R-3350, the original design had become obsolescent and the designers had much work to do in incorporating the latest engineering practices. Such an experience clearly illustrates the fact that a basic design must be followed by continuing development work. . . ."

Many of the difficulties of rapid expansion, in the eyes of the authors of the report, stemmed from a psychological unpreparedness of the entire country. "In the final analysis the responsibility [for lack of preparedness] is that of a democratic nation that did not believe preparedness was necessary when the rest of the world was ready for war."

Air Force Slash

U. S. Air Defense Command will eliminate two of the six air forces under its jurisdiction as an economy move. Final decision on which two air forces will be shelved will be made at a Mitchel Field, N. Y., meeting Jan. 13. The 11th and 14th Air Force based at Harrisburg, Pa., and Orlando, Fla., are considered most likely candidates for de-activation.

PRODUCTION PROGRESS REPORT–1947

All Manufacturers

Month	*2-Place*	*3-Place*	*Transports*	*Military*	*Total*	*Value**
January	969	1,176	21	111	2,277	$53,210,421
February	793	1,109	12	99	2,013	56,157,550
March	789	972	24	137	1,922	55,363,825
April	964	1,042	32	105	2,143	58,505,836
May	847	771	28	94	1,740	62,970,218
June	590	572	31	139	1,332	90,657,575
July	475	508	15	104	1,102	44,877,858
August	434	470	25	211	1,140	53,240,991
September	547	431	50	323	1,351	63,903,155
October	390	364	48	239	1,041	77,283,490
	6,798	7,415	286	1,562	16,061	$616,170,919

* Includes aircraft, parts, conversions, all other products and all payments to military contractors during the period. Table based on *"Facts for Industry"* of the Bureau of the Census.

Personal Aircraft Companies Reporting to Aircraft Industries Association

	Shipments			*Value*		
	Jan.-Nov.	Nov.	Oct.	Jan.-Nov.	Nov.	Oct.
Aeronca	1,179	129	193	$2,877,000	$246,000	$349,000
All American	1	...	1	3,000	.....	3,000
Beech	1,145	100	101	7,453,000	750,000	757,000
Bellanca	208	7	8	1,040,000	35,000	40,000
Cessna	2,354	43	66	5,804,000	265,000	295,000
Engineering and Research	778	5	35	2,014,000	13,000	91,000
Funk	36	3	N.A.	135,000	12,000	N.A.
Luscombe	1,294	110	108	3,204,000	216,000	257,000
North American	853	...	11	5,021,000	.....	59,000
Piper	3,422	85	93	7,614,000	189,000	197,000
Republic	813	16	15	3,882,000	74,000	70,000
Stinson	2,516	159	205	10,831,000	742,000	915,000
Taylorcraft	188	13	15	352,000	23,000	28,000
Texas Engineering	189	24	36	728,000	86,000	108,000
Totals	15,389	702	877	$51,000,000	$2,686,000	$3,177,000

Notes: Beech figures do not include Jan., Feb. and March. Aeronca figures include shipments of L-16s to the Army which were 113 in Oct. and total 298 for the year. Funk figures are for 10 months only.

Boeing Re-Assigns XB-47 Project Staff

With one XB-47 in the flight test stage and another ready to be rolled out of the factory, Boeing Aircraft Co. has transferred many of its engineers on the XB-47 project to other work.

Of 275 engineering personnel employed on the jet bomber at the peak of the project, only 50 remain, with about half of the remainder transferred to new projects.

Roy V. Ostling, equipment group engineer on the XB-47, is project engineer for the YB-50-C, with C. H. Strandberg and H. J. Berryman also assigned to the YB-50-C. H. R. Brown, C. H. Davies, Henry Ravelli and Van Butler, all XB-47 supervisors, are assigned as group engineers on the XB-52. W. H. Wilkes, D. H. Graves, and J. W. Freeding, formerly assistant supervisors on XB-47 work, are group engineers on the YB-50-C.

D. S. Lewis, another XB-47 project supervisor, is working on a restricted project in preliminary design.

The new "50" is an advanced design of the present heavy bomber, with more powerful engines, while the XB-52 is believed possibly to incorporate a new type power plant for Boeing planes.

In other personnel actions:

• **General Electric Co.** promoted Henry V. Erben to vice president and general manager of the Apparatus Department, largest of the seven G-E operating departments. Erben succeeds Roy C. Muir who retired Dec. 31, after more than 42 years service. John D. Lockton has been elected treasurer of the company, succeeding Jesse W. Lewis who retired Dec. 31, after more than 37 years service.

Joseph F. Eckel was promoted to manager of the Lynn River Works. Eckel has been assistant manager of the River Works since April, 1945, and now succeeds George M. Stevens who retired Dec. 31 after 46 years of service.

• **Lockheed Aircraft Service, Inc.,** appointed Luke Harris vice president and Burbank base manager. Harris took over his new duties Jan. 1, succeeding H. W. Allen, former Burbank base manager, who has resigned to devote full time to his own business. Harris retains his position on the board of directors.

• **Bendix Aviation Corp., Pacific Division,** appointed V. J. Moore as eastern sales-engineering representative with headquarters in New York. Moore has been a sales engineer with Bendix-Pacific at the North Hollywood plant for the past two years and prior to that spent three years in the engineering department.

• **Adel Precision Products Corp.** appointed D. S. Grubbs, secretary and treasurer. Grubbs was for a number of years with United States Steel Corp. in Pittsburgh as audit supervisor of the parent Delaware corporation and in Dallas as comptroller of Oil Well Supply Co. He also served as treasurer of Luscombe Airplane Corp. at Dallas and as comptroller of Rexall Drug Co. in Los Angeles.

• **Raybestos-Manhattan, Inc., Manhattan Rubber Division,** appointed P. L. Edwards assistant manager of its central district office in Pittsburgh. Edwards, who has been manager of the products division of Manhattan's western district office, started with the company 29 years ago. He will take over his new duties on Jan. 1.

• **Monsanto Chemical Co.** appointed Tom K. Smith, Jr., assistant branch manager of its phosphate division. Smith will be in charge of the Cincinnati branch of the division's Detroit office. He will supervise sales of all phosphate division products in his territory.

• **Titeflex, Inc.,** named Robert E. Carbauh sales manager of a new department for development and promotion of fire control equipment. Prior to joining Titeflex, Carbauh was manager of the aircraft division for Wilcolator Co., previously he was with the Spencer Thermostat Co. for 14 years. He has served as a consultant to the S.A.E. Committee in preparing specifications for the S.A.E. Aeronautical Standards on smoke and fire detecting instruments.

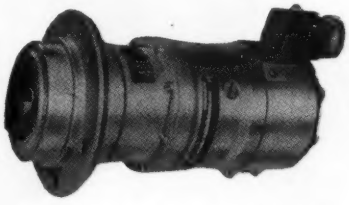
• **John A. Roebling's Sons Co.** appointed L. H. Van Dike, Jr., Detroit, Mich., representative, replacing the late Harry T. Hirbe, who died Nov. 24. Van Dike, a former lieutenant in the USNR, is a graduate of Dartmouth College and the Tuck School of Business Administration. He has been associated with the company since 1946.

• **Johns-Manville Corp.** appointed J. L. Miller, plant manager at the Zelienople, Pa., plant. Miller has been production superintendent at this plant since 1942. He succeeds S. K. Cooper who resigned. Miller was formerly in the Johns-Manville laboratories for several years where he had specialized in research and development activities concerned with refractories and insulating brick.

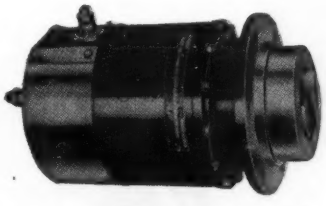
ON ALL AIRCRAFT POWER PLANTS

Type 756—24 volts d-c for engines up to 750 cu. in. displacement. Weight 19 lbs. Also available for same size engines is type 397 for 12 volt systems.

Type 1651—24 volt d-c for engines up to 3500 cu. in. displacement. Weight 27.00 lbs.



Type 1550—24 volt d-c for engines up to 4360 cu. in. displacement. Weight 26.75 lbs.



Type 1498—24 volt d-c for jet engines having moment of inertia of 187 lb-ft² and larger. Weight 27.75 lbs.

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Flight Record Aids Safety, Efficiency

GE device using new pick-up and inscribing system promises valuable results for several operational purposes.

By CLARE L. BEATTIE and PHILIP J. KLASS
(General Electric Co.)

The Civil Aeronautics Board has adopted a regulation which will require all airlines to install 2-channel flight recorders in every airplane used in scheduled flights in the continental United States. This action is further evidence of the effort which is being made to improve the safety of air transport and to improve the efficiency of airline operation.

Every aircraft accident, if its prime cause were known, might disclose a new means of improving the safety of air transport. Accident analysis is therefore a powerful instrument for improving the safety of air travel. The problem of determining the cause of an air mishap from a few battered pieces of aircraft is a difficult one at best.

There are some in air transport who feel that they can improve the safety and efficiency of their operations by means of an "airborne accounting system" or by "aftercasting" as it is sometimes called. An airline, they believe, should know more about what takes place during flight. Was the pilot forced to deviate from his assigned altitude or his flight plan? Were the power plants efficiently operated? Did the automatic flight equipment operate satisfactorily? Was the airframe subjected to extreme turbulence and stresses? Answers to these and other questions are available to airlines that will make frequent analyses of their flight records.

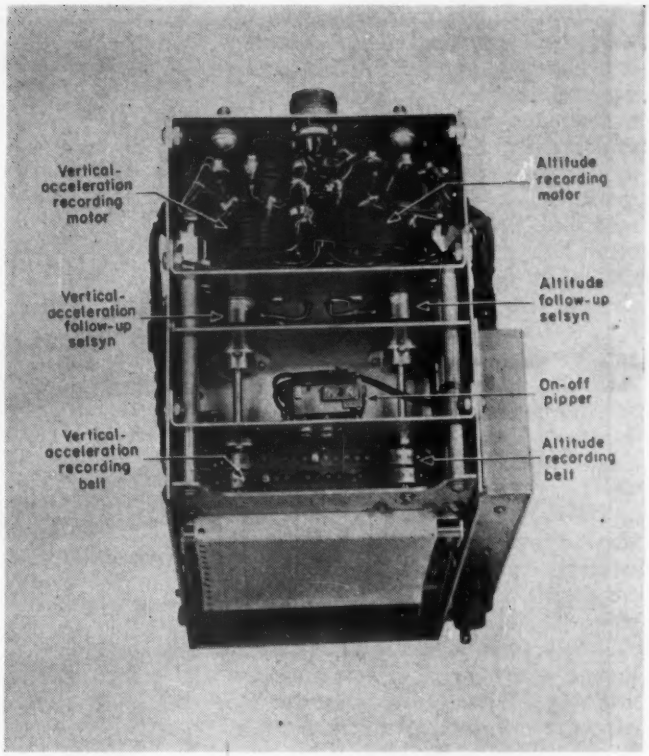
As with any accounting system, analysis of flight records does not produce revenue directly. It does, however, provide facts and figures on daily operations which make possible more effective management and more efficient operations.

For this reason some airlines are looking to the use of flight recorders to provide daily operational data on their flights in addition to the use of the flight record in the event of an accident. A few of these airlines are thinking of installing larger 4-channel recorders to obtain a continuous record of airspeed, compass heading, manifold pressure, engine rpm. or other data in addition to the altitude and vertical acceleration data required by the CAB.

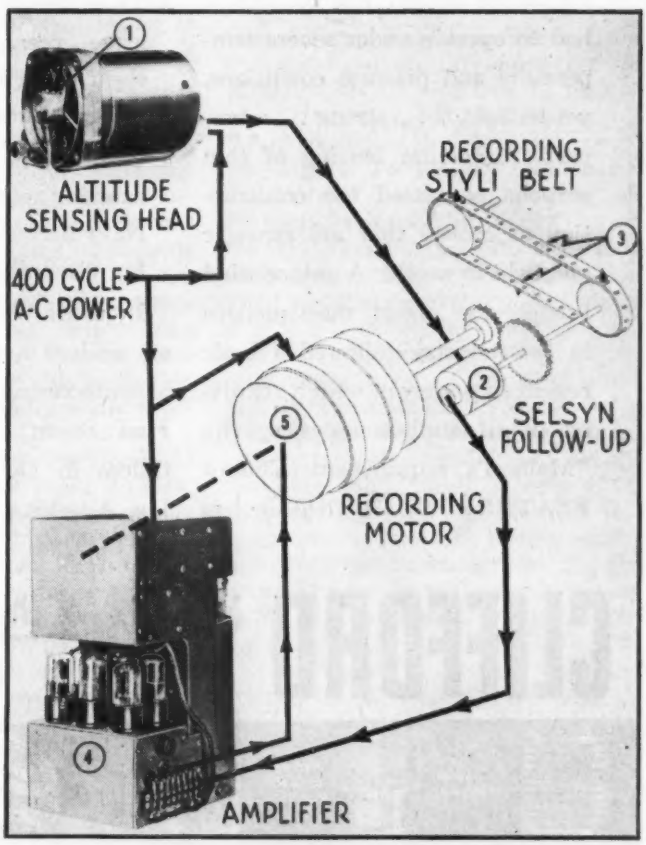
► **Airline Requirements**—The widespread use of recording devices in industry and their use in buses and locomotives plus inquiries from several airlines led General Electric to embark on a flight recorder development program in late 1945. At this time preliminary discussions were held with several airlines to determine their requirements. These discussions indicated that it would be difficult to obtain agreement among the airlines as to the particular functions which should be recorded. If a special, tailor-made recorder had to be designed for each airline, its cost would be prohibitive.

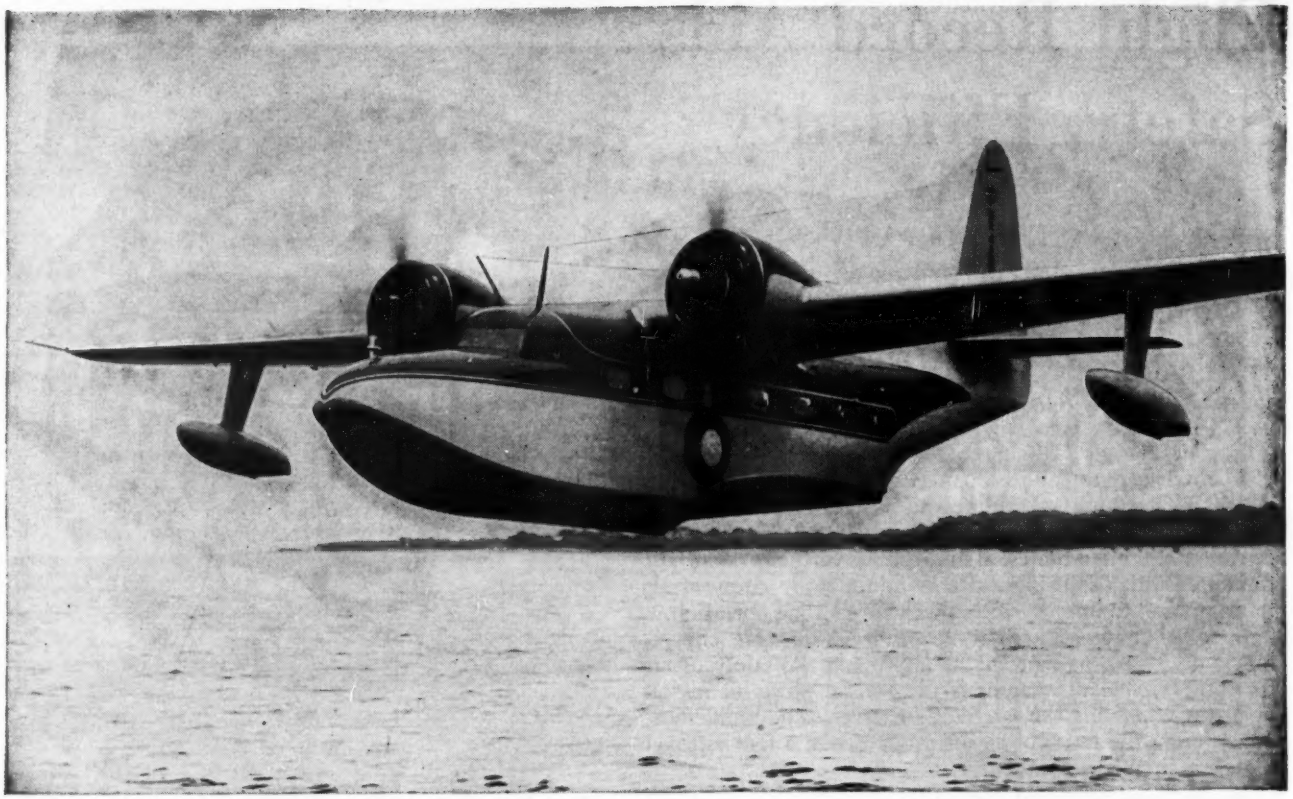
This situation suggested the design of a remote type of flight recorder and the use of a small electrical position transmitter which could be installed on various standard aircraft instruments. This would provide one standard recorder design which could meet the requirements of almost any airline.

Based on earlier flight recorder experience, the airlines



Above, view of the prototype GE remote-type flight recorder with cover removed. Below, a schematic diagram of the recorder illustrating principles of operation. Like older devices of this nature, the recorder itself is placed in the tail of the airplane, deemed to be the place most likely to suffer severe damage in a crash. But GE's most notable improvements are the small selsyn pick-off attached to the face of the instrument, and its stylus method of recording which gives a permanent record.





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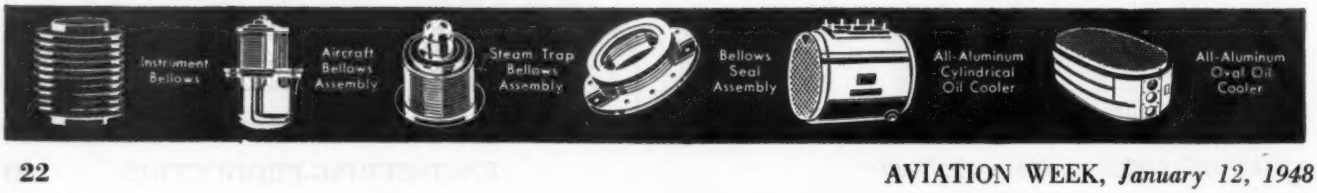


contacted prior to the beginning of design work indicated that a flight recorder should meet the following basic requirements:

(1) Eliminate the use of pen and ink recording because of the adverse effect on the quality of the record which results from aircraft vibration, accelerations and wide variations in ambient temperatures.

(2) Provide a greatly expanded scale so that the recorded data could be easily and accurately analyzed.

(3) Provide a versatile design which could be easily converted to record new or different functions as airline needs changed.

The remote flight recorder makes it possible to measure the desired function at the most accurate or convenient location in the airplane while enabling the recording unit to be installed in the tail of the airplane. When the recorder is so located, greater protection of the flight record is possible in the event of an accident. Using the remote principle, it is possible to measure vertical acceleration at the airplane's center of gravity; altitude and airspeed from existing pilot-static lines near the pilot's altimeter and airspeed indicator; compass heading in an area free of magnetic disturbance or to obtain a stabilized heading signal directly from the auto-pilot.

The importance of remote measuring locations is emphasized by N.A.C.A. data. Their tests indicate that average errors of 25 percent during flight and 100 percent or more during landing may be expected in the vertical acceleration records if vertical acceleration is measured in the tail instead of at the airplane's center of gravity. The remote recorder design not only eliminates these errors, but permits the acceleration measuring device to be rigidly secured to the airframe while allowing the recording unit to be shock mounted. This eliminates another source of spurious acceleration recordings.

► **Miniature Selsyn**—If standard commercially available aircraft instruments could be used to measure the desired intelligence, a proven source of signal would be available at less cost. With this in mind, the crux of the problem of developing a remote flight recorder was to design a small electrical position transmitter which could be attached to any standard aircraft instrument to transmit electrically the reading of the instrument to the recording unit. The position transmitter, or selsyn, had to be of such a design that it would impose an exceptionally light load on a sensitive, low-torque instrument such as a barometric altimeter, and not cause excessive errors in the instrument's reading.

To meet this requirement, a small selsyn pick-off, approximately one inch

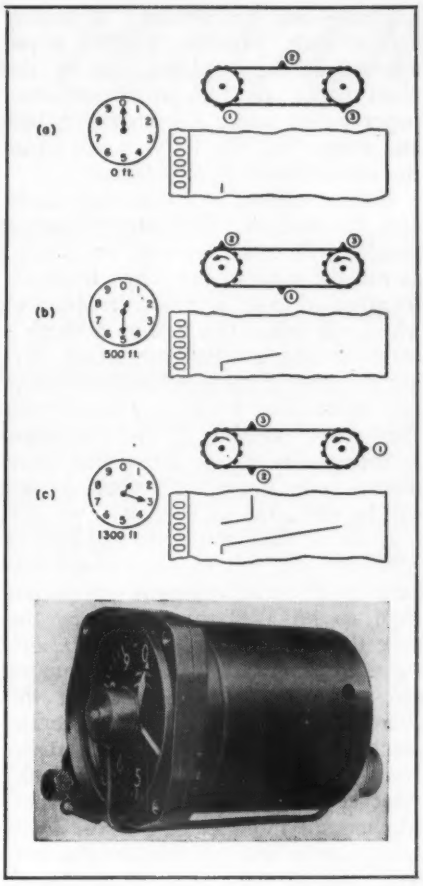


Chart at top illustrates how the flight recorder makes its record of an airplane's climb, as explained in the accompanying text. Below is the selsyn pick-off attached to an altimeter. It is mounted on a plastic cover replacing the usual glass covering of the instrument, and the selsyn rotor is coupled to the instrument pointer.

in diameter, was developed. This tiny selsyn is functionally similar to its many larger brothers which have found frequent application in servo systems for many years. It differs in that both its primary and secondary windings are stationary; therefore, no brushes or slip-rings are required. The only moving part is a tiny shaft with two metal vanes which is used to change the distribution of magnetic flux in the secondary winding.

The selsyn transmitter is mounted on a plastic cover glass which is substituted for the existing cover glass on any standard aircraft instrument of the pointer indicating type. The rotor of the selsyn is coupled to the instrument pointer by means of a small fork which straddles the instrument pointer.

The static breakaway torque (with no vibration) required by the selsyn is approximately 0.0002 ounce-inches. The effect of this load on a bellows-operated sensitive altimeter, for example, is so small that it will introduce no more than 50 feet error into the reading of the instrument at 20,000 feet altitude.

► **Principles of Operation**—The operation of the flight recorder is similar to the conventional follow-up or servo system. The primary winding of the selsyn transmitter (1) is excited from a source of 400 cycle a-c power. The signal from the secondary winding of the selsyn transmitter is supplied to a similar toroid winding in the selsyn follow-up (2) located in the recording unit. This selsyn follow-up has its rotor directly coupled to the recording stylus belt (3) which is in turn driven by the recording motor (5). If a difference exists between the instrument reading and the value being recorded, the selsyn follow-up transmits an a-c error signal to a three-stage vacuum tube amplifier (4). The amplified signal is then applied to one winding of a two-phase low-inertia a-c recording motor (5) whose other winding is constantly excited from the 400 cycle a-c supply. This recording motor in turn drives the recording stylus into correspondence with the reading of the transmitting instrument and selsyn.

The amplifier is of conventional design with a 12SL7, twin triode, used as a voltage amplifier and a 6V6 and 6X5 used as a power tube and rectifier-voltage doubler, respectively. The tube heaters are operated in series directly across the airplane's 28-volt d-c supply thereby eliminating the weight of transformers.

There is considerable variation in the characteristics of the functions which may be recorded. For example, altitude may vary through 50 percent of its range during a flight, but such variations are at a very low frequency. On the other hand, vertical acceleration will normally vary through only 10 percent of its total range, but the frequency of the phenomenon may be several cycles per second. To simplify maintenance and service problems, however, all channels are identical in design and response. The recorder will accurately follow a sinusoidal vertical acceleration input whose peak value is plus or minus 0.5g at a frequency of 3 cycles per second with negligible overshoot. Higher response up to 9 c.p.s. may be obtained at a slight sacrifice in accuracy.

► **Faults of Ink Recording**—Experience has shown that ink and aircraft recording don't "mix". Under vibration, the ink runs and blots; at low temperatures the ink freezes; under most conditions dust and dirt clog the pens. The frequent filling and cleaning of the recording pens is a time-consuming nuisance.

A new pressure sensitive paper, developed for the General Electric Company, eliminates these airborne recording difficulties. It consists of a black paper base which is coated with a thin layer of white lacquer. A stylus riding on the paper cuts through the white

coating thereby exposing the black base. This creates a fine-line trace which is approximately 0.010 inch wide. The stylus scribes the trace without collecting lacquer particles; cleaning of the recording styli is therefore unnecessary.

The quality of the trace is not affected by normal temperatures experienced in aircraft operations. The paper may be submerged in salt water and after being dried, shows no ill effects of its submersion. The paper may be permanetized after recording to prevent scratching during analysis.

In order to provide a greatly expanded recording scale for increased accuracy and readability, a continuous-belt recording system has been utilized. By so doing, it is possible to offer an altitude scale which is expanded 20 to 40 times that which is obtained with conventional recording schemes. This is done without increasing the width of the chart paper.

The recorder is so constructed that for each complete revolution of the instrument pointer (and the selsyn transmitter rotor), the belt sprocket wheel will make one complete revolution. As it revolves it drives the continuous metal belt which mounts three small metal styli, equally spaced along the length of the belt. In the accompanying illustration, the top figure represents the airplane on the ground (at sea level) and the altimeter is reading zero altitude. The No. 1 stylus is positioned at the left-hand side of the chart paper. As the pressure-sensitive paper passes under the recording belt and stylus, the No. 1 stylus will scribe the zero altitude trace shown.

If the airplane takes off and climbs to 500 ft. altitude, the long altimeter pointer will make one-half revolution, as will the rotor of the selsyn transmitter attached to it. The recorder sprocket wheel will follow this motion through a corresponding one-half revolution driving the continuous metal belt and carrying stylus No. 1 half-way across the chart paper as shown. As the paper is driven (by the chart paper drive motor) under the recording belt, a trace will be scribed.

If the airplane continues to climb to 1,000 ft., the belt sprocket wheel will have made one complete revolution from its initial starting point by the time the airplane reaches 1,000 ft. altitude. Stylus No. 1 will have moved across to the right-hand side of the chart paper. As the altitude of the airplane increases above 1,000 ft., stylus No. 1 will ride up on the right-hand sprocket idler, leaving the chart paper. At the same moment stylus No. 2 will swing down into position on the left-hand side of the paper. Stylus No. 2 will then continue the altitude trace. If the airplane climbs to 1,300 ft. and then levels off, the No. 2 stylus will then cease its sideways movement and the trace shown in the lower figure will result. If the altitude had continued to increase, one additional sweep would be recorded for every additional thousand feet of airplane altitude. For decreasing altitude, the slope of the altitude trace will be reversed.

Thus, the use of the continuous-belt recording system provides a 3-inch scale for every thousand feet of altitude. Using this greatly expanded scale, a deviation of 10-ft. in airplane altitude is clearly discernible. Similar scales of great accuracy and readability can be obtained by using a sensitive airspeed indicator, manifold pressure gage or other sensitive type instrument for a sensing head. The continuous-belt recording system is especially well adapted to recording a continually rotating function such as the compass-heading of the airplane. The conventional recording pen on the end of an arm would have difficulty recording the compass heading of an airplane circling a field through more than 360 degrees.

► **Chart Paper Drive**—The chart paper is driven by means of a rubber friction roller which exerts its driving force across the full width of the chart paper. The roller is powered by a small synchronous motor which receives its 60-cycle a-c power from a small sealed vibrator. This arrangement provides a times axis accuracy of approximately 5 percent. For a greater time scale accuracy, a small temperature-compensated escapement may be added and driven by the chart drive motor. This escapement will, at five minute intervals, close a set of electrical contacts which will in turn energize one of the two "on-off pippers" in the recorder. When energized, the on-off pipper scribes a small pip on the edge of the chart paper. The accumulated inaccuracy of these timing pips will not exceed 0.5 percent.

A chart speed of 3 in. per hour is provided. By shifting one gear, this speed may be increased to 6 in. per hour. The latter speed may be desirable for rapidly climbing pressurized airplanes. Higher chart speeds for experimental applications are available as a modification of the basic design. A 200-hour chart supply of paper is provided at the 3-inch-per-hour speed.

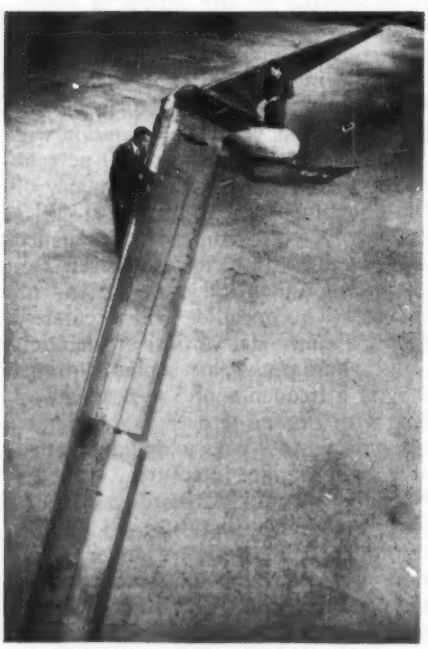
The chart carriage itself is so designed that it may be easily removed from the recording unit for loading the chart paper. Extra chart carriages may be pre-loaded.

► **Maintenance**—The remote flight recorder has much to recommend it from a maintenance and service standpoint. By utilizing standard, already proven aircraft instruments as sensing heads, negligible trouble may be anticipated in the sensing heads. Because it is possible to use instruments from a manufacturer of the individual purchaser's own choice, maintenance and overhaul procedures for the sensing heads are already known by service personnel; spare parts are already in stock.

By making each channel of the flight recorder identical, education of maintenance and service personnel is simplified. When they are familiar with one channel, they are competent to service any channel of a 2 or 4-channel flight recorder. This also eases spare parts procurement.

The use of inkless recording eliminates the frequent filling and cleaning of the recording system without introducing equivalent duties or hazards. Because of its simple, yet sturdy, construction the continuous-belt recording system should require little attention.

The remote type flight recorder offers not only high accuracy, readability and ease of maintenance, but extreme flexibility and versatility as well. One standard recorder, for example, can be permanently installed in an aircraft to record operational data such as altitude, vertical acceleration, airspeed and compass heading. Another identical recorder can be used for occasional spot checks on such functions as engine rpm. and manifold pressure. Thus, procurement of one standard recorder can serve the interests of many groups.



NORTHROP STUDIES GLIDER

Northrop Aeronautical Institute (Hawthorne, Calif.) students are shown examining a captured Horten Model VI all-wing glider, so that they might study the aerodynamic characteristics of the tailless sailplane. The craft was captured by the Army in Germany is being repaired and reassembled by the students. It was sent to the Institute by the Air Force at Wright Field.

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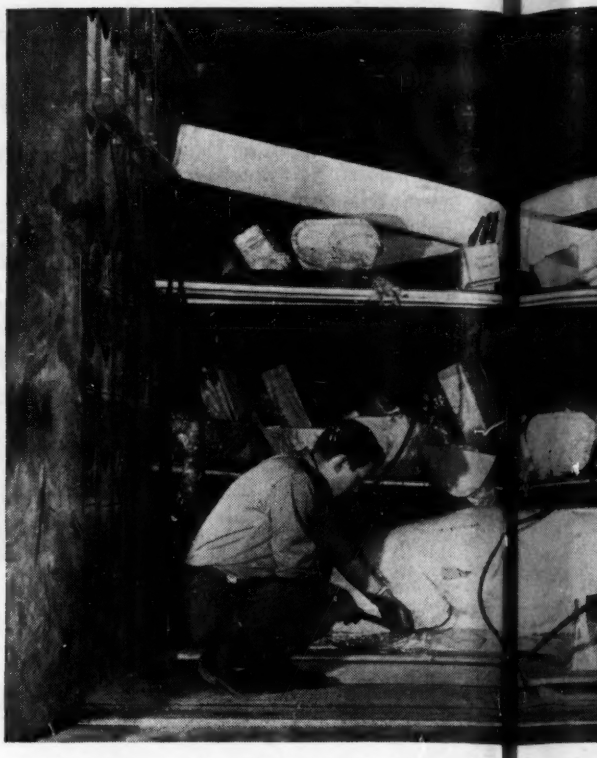
First, Fiberglas, impregnated with resin, is wrapped around a plaster mold or mandrel three or four layers thick, like wrapping bandages. The mandrel is first coated with a red lacquer visible through one layer of plastic so that workers can visually check the completeness of the wrapping and avoid thin spots in the finished duct.



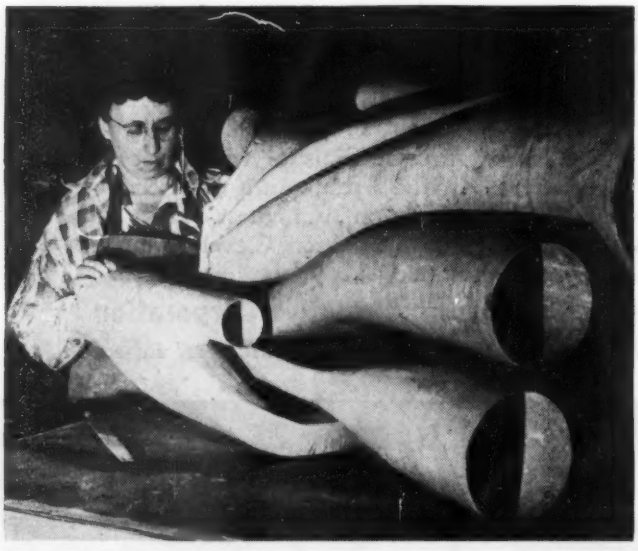
Unit is then encased in a plastic bag, air is pumped o the bag so soft Fiberglas tightly to the mandrel. The entire a bly is then ing. Baking is done at temperatures between 200 a 0 deg. A chipped away. Workers are shown preparing mold p to baking.

Plastic Ducts to Assist Designers

Complicated ducting problems in the Stratocruiser have been solved by the Boeing Aircraft Co. through the manufacture and use of preformed plastic ducts. These ducts are fabricated from Fiberglas impregnated with resin, the composition being wound around a plaster mold or mandrel. Completed form is baked, under pressure, in an oven to cure the plastic.

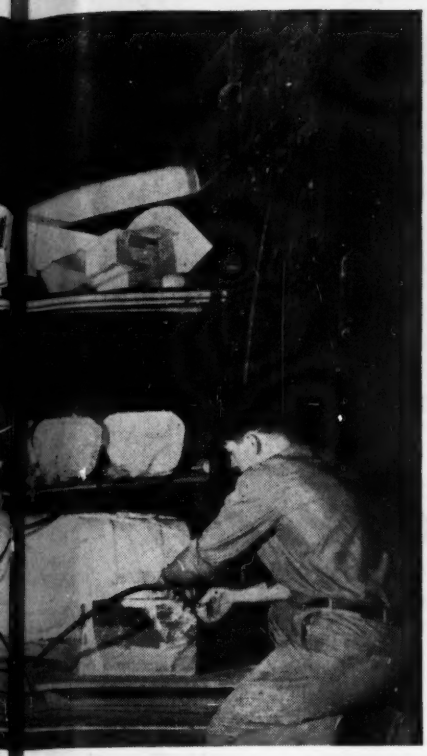
Because of the variety of intricate shapes which can be made in this manner, designers are able to plan their ducts so as to utilize for other purposes more of the space usually required for ducting. This gives greater latitude in design and serves to increase the efficiency of installations.

Boeing claims that the strength of these ducts is such that a 200 lb. man can jump on them without damaging them. Principal stages in the fabrication of the plastic ducts are shown in the accompanying photographs.



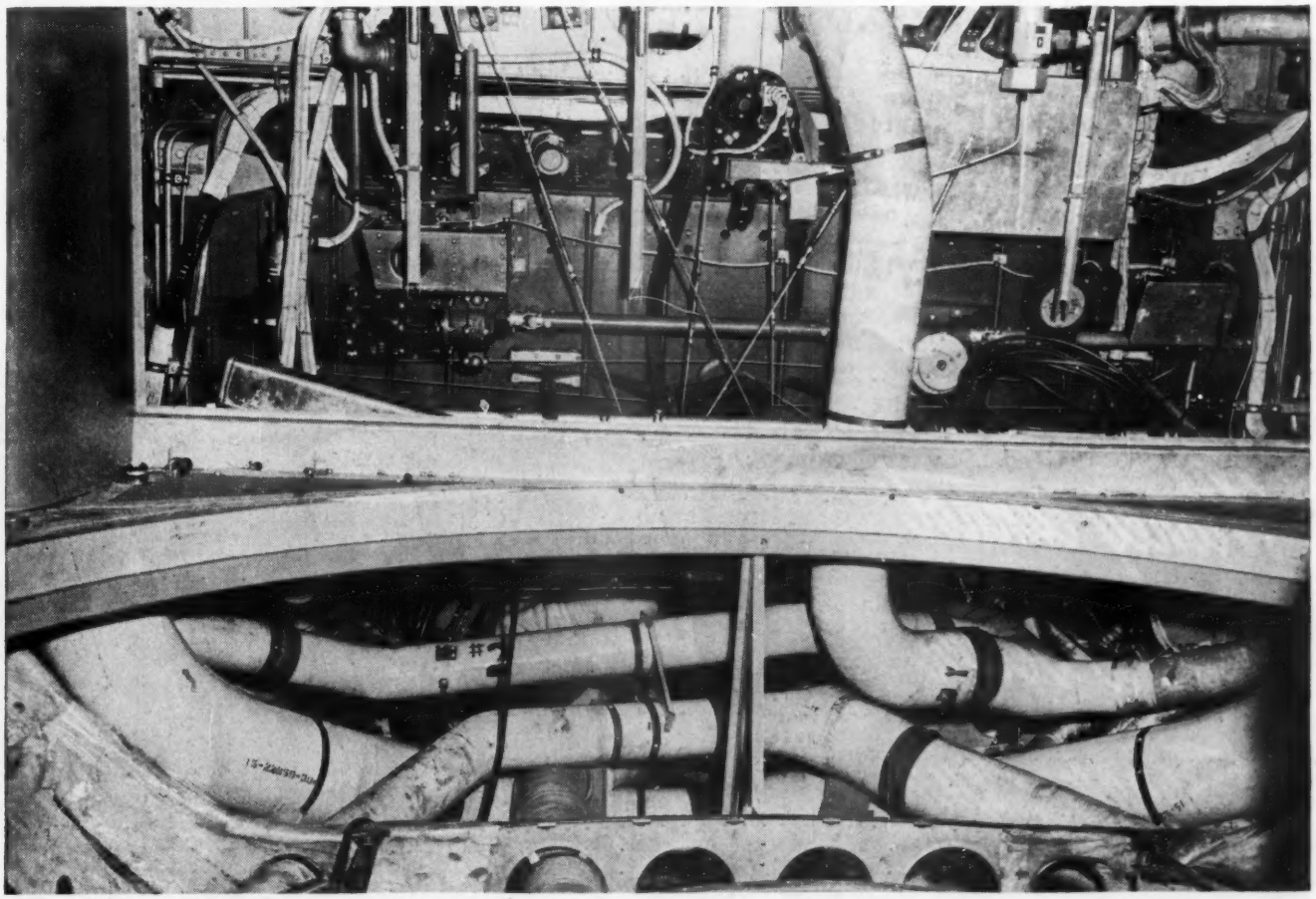
Weird looking duct known as the "octopus" is in reality the mixing chamber for a Stratocruiser heating system. Just one example of the intricate ducts possible with Fiberglas construction.

Installation of the ducts is simple, requiring no riveting. The protective i tion shown in this picture was applied by hand and sewed on just before duct was ted. Variety of shapes available makes this type of installation simple.



the bag so that outside air pressure holds the
bly is then placed in a baking oven for cur-
0 deg. After cooling the plaster mandrel is
to baking.

Finishing of the baked duct is carried on after the removal of the core. The different components of a system are carefully prepared to assure correct fit and positioning when installed. Joints are carefully smoothed and cut to size. Note that not all of the mandrel has been removed from the pipe in the foreground. Workman is fitting elbow joint to insure alignment.



Interior of the Stratocruiser just forward of the lower-deck lounge, shows a typical installation of the plastic ducts. In cramped quarters such as these the preformed shapes readily adapt themselves to installation where valuable time would be lost in installing usual type metal ducts. Another feature of the plastic duct is the fire resistant quality of the Fiberglas and its additional strength.

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Noise Reduction Devices Shown On Modified Stinson Voyager

Boston demonstration by Aeronautical Research Foundation plane well received; noise level under that for passing car.

BY ALEXANDER McSURELY

A Boston audience of approximately 50 persons for a recent preliminary public demonstration of the modified Stinson Voyager which is being used by Aeronautical Research Foundation, Inc. in its NACA-financed aircraft noise reduction research program, regarded the demonstration as effective and highly successful.

The plane was flown low in simulated landing approaches and takeoff runs over a small open area adjacent to a Boston hospital and residential area. Observers reported the noise from the plane, except when directly overhead at very low altitude, approximately 10 to 20 ft. was hardly distinguishable above the general noise level in the area. A noise meter showed the plane was quieter than passing motor cars at the edge of the field with a maximum reading of 80 decibels when directly overhead at very low level.

► **Special Gear**—The airplane, previously described in detail in AVIATION WEEK (Oct. 27 issue) used a Franklin engine with a special reduction gear causing the propeller to turn about half the speed of the engine rpm., a four-blade Sensenich wood-fixed pitch propeller, specially designed for the experiments, and a pair of super mufflers designed by the Maxim Silencer Company.

The tests are being conducted by Prof. Otto Koppen and Prof. Fay Taylor of Massachusetts Institute of Technology and Prof. Lynn Bollinger, of Harvard University Business School, executive director of the research group.

► **Varied Blades**—Next step in the noise reduction research will be a series of tests with various numbers of propeller blades, using one of two special propeller hubs machined by Taft-Pierce, Woonsocket, R. I. from three-in. aluminum plate. Each hub is designed to accommodate several combinations of blades, so that the plane can use progressively any desired number from two to eight blades, to test the merits of each configuration.

It is expected from propeller theory that the multi-blade propellers will carry noise reduction to a point where for practical purposes, it is virtually extinct, when used in combination with the geared engine and the extremely efficient mufflers.

Once this ultimate goal is accomplished, the tests will gradually move up the ladder of increasing noise intensity, in a gradual progress until a noise intensity on the threshold of airplane noise nuisance is reached. Somewhere just below this point will be designated as the minimum noise reduction required to make personal airplanes "good neighbors" at close-in airparks in residential areas.

► **Muffler Combines**—Besides varying the propeller configurations, the tests will include varying combinations of mufflers, ranging from the "super-silent" Maxim mufflers, down to less complicated exhaust devices, also previously described in AVIATION WEEK.

First test with the special propeller hubs are scheduled to start sometime this month at Boston. The hubs have been sent to the Sensenich plant at Lancaster, Penna., where Leslie Trigg, chief engineer, is directing design and installation of the blades according to ARF specifications.

Exploration of an alternate method of turning propellers slowly, by using a larger engine and turning it slower, without a reduction gear, is another avenue of research being considered by ARF and an installation of this type may be tested on another airplane at a later time.

► **Donated Equipment**—The research group, which has had equipment donated by various manufacturers, and has access to MIT aeronautical research equipment operates its flight tests at Joe Garside's Wiggins Airways Field at Norwood, Mass.

Results of the Boston research program are being closely watched by virtually all personal plane manufacturers since the reduction of aircraft noise is regarded as an important factor in improving public acceptance of the airplane as a personal vehicle.

Baltimore and Ft. Worth

Establishment of two branches of Interstate Air-Credit Corp., at Baltimore and Ft. Worth, has been announced by H. A. Shaffer, president, from the home office at Minneapolis. John K. Hinson, fixed base operator and aircraft distributor at Baltimore Municipal Airport will head the Baltimore branch, while R. A. Newman is head of the Ft. Worth branch.

'COPTERS AID CRANBERRIES

Versatility of the helicopter was utilized by Cape Cod (Mass.) cranberry growers in their 1947 harvest when the 'copters dusted thousands of acres in the cranberry bogs in an effort to battle insect and disease. (Press Assn.)

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Las Vegas Airport

Las Vegas, N. M., may have a new $750,000 airport in 1948 as the result of an Interior Department action making 1,320 acres of federal land available, the first transfer to be made by the department under the Federal Airport Act of 1947. Final steps for turning the land over to officials of Clark County are scheduled for January. The airport law authorizes conveyance of government lands for airport use upon recommendation of CAA. The city's municipal airport was taken over by the Army Air Forces during the war under agreement with the city and commercial airlines. After the war the Air Forces decided to maintain the Las Vegas gunnery school on a permanent basis and commercial aviation was barred from the field. The city has raised $750,000 through a bond issue for development of the new port.

New Copter Group

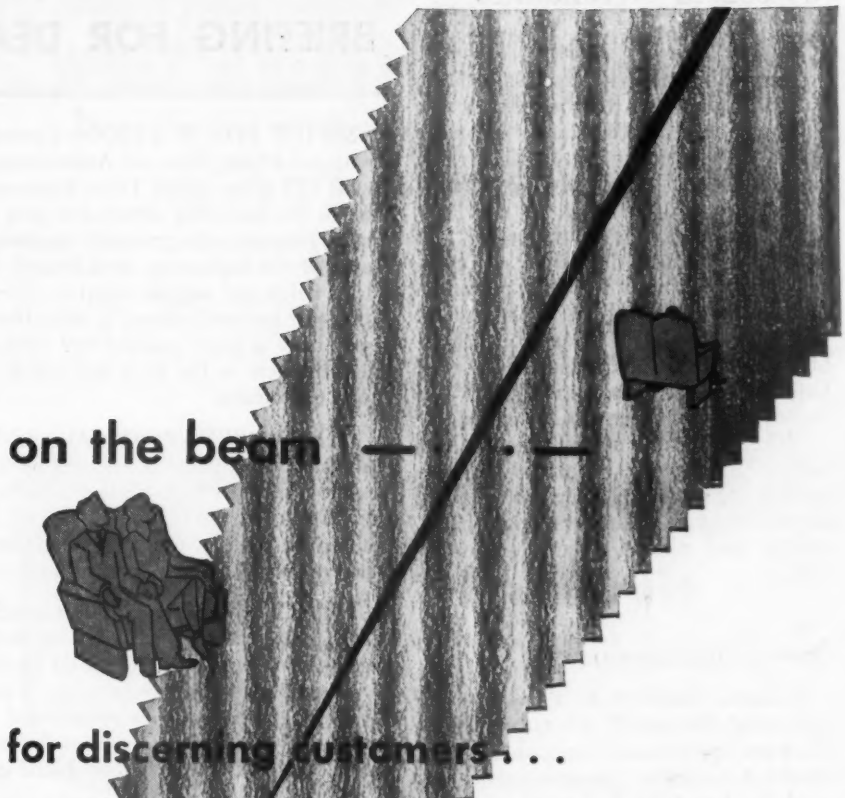
Aviation committee of the Oakland (Calif.) Chamber of Commerce has appointed Markell Baer chairman of a new helicopter subcommittee to promote rotary-wing mail pickup service in the Oakland Bay area. The committee includes Fred McCormac, Harold Avery, Walt Vollmer and William White. It will investigate legislative barriers to a possible helicopter pickup service and submit recommendations for clearing the legal path to such service.

New Seaplane Base

J. B. Lome, president of Aero Tool Works, Ltd., Huntsville, Ont., Canada, has purchased land for construction of a sky vacation resort. A seaplane base will be set up on peninsula Lake and mooring buoys installed for a minimum of 15 amphibians. Guests will be offered flying fishing trips into northern Ontario and in the winter ski planes will be available for flying guests to ski runs and winter resorts.

CAP Radio Net

A high frequency radio network linking Civil Air Patrol squadrons of North Dakota and northwestern Minnesota, will be in operation in 1948. Captain Julius Hetland, wing communications officer, reported that two transmitter and receiving stations, at Fargo and Thief River Falls, Minnesota, probably will be in operation in a week or two. Other equipment will be available soon to additional squadrons and by the end of next year every squadron—16 in the two states—is expected to be equipped.



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Wisconsin Aeronautics Meeting Set Next Month

Second annual Wisconsin State Aeronautics conference will be held at the Pfister Hotel in Milwaukee February 26 to 28, according to T. K. Jordan, executive secretary of the Wisconsin Aeronautics Commission.

Col. Lester J. Maitland, recently appointed to become director of the commission on February 1, will be chairman of the meeting, which is sponsored jointly by the Commission, the League of Wisconsin Municipalities, the County Boards Association, and the Wisconsin Chamber of Commerce.

While schedules are still incomplete, national aviation authorities are expected to speak on state and federal airport programs, airport construction, zoning and airline operation, Jordan said.

New Commissioner

Governor McCord of Tennessee has appointed Rhoton P. Clift, prominent Chattanooga business man, to the Tennessee Aeronautics Commission to succeed the late John E. Lovell, of Chattanooga. Other members of the commission are Charles S. Ragland, of Nashville, chairman, and Bob Guinn, Jr., of Savannah.

New Rental Service

Lome Airways, Ltd., Toronto, has started first Canadian "rent-a-plane" service at the Island Airport, Toronto. Company uses Taylorcraft, Stinson Voyager, Beechcraft Bonanza and Cessna Crane aircraft on its rental service.

Sioux Falls Gets Big Air Force Surplus Base

An estimated $2,250,000 worth of buildings, equipment and improvements at the sprawling Sioux Falls, South Dakota, air base has been turned back to the city by the federal government. The air base covers about 1,582 acres and contains Army-built structures used in training thousands of aircraft radio students. Southern half of the base will be turned into a residential, commercial and recreation area. About 100 buildings, 20 warehouses, 14,000 feet of railroad track and the electrical distribution system in that section, valued at an estimated $300,000 will be sold. The city-acquired property and equipment in the northern half, the commercial airport itself, is valued at about $1,000,000.

BRIEFING FOR DEALERS & DISTRIBUTORS

SWIFT FOR WATSON—Forrest Watson, Thomas, Okla., president of the National Flying Farmers Association, recently took delivery of a two-place deluxe Swift 125 plane at the Texas Engineering & Manufacturing Co., Dallas. Watson's use of the low-wing retractable gear plane will be watched with interest by other flying farmers, who generally speaking have been shying from this type of plane in favor of the high-wing, strut-braced, fixed landing gear types, as better adapted for short fields and rugged country. The higher speed of the Swift, and other retractable gear personal planes is attractive to all flyers, and since the price of the Swift two-placer is quite competitive with other fixed gear two-placers, it may win additional buyers in the farm and ranch areas, if Watson, a conservative pilot, reports good experience.

GOOD OPERATION AWARDS—National Aeronautic Association's 1947 airport safety campaign concluded with awards of certificates of good operating practice to 433 airports, in 33 states, with Pennsylvania winning 63 awards, Nebraska 56 and Connecticut, 37, as the leaders. NAA has returned rating sheets of all airports failing to qualify under the standards set, asking them to make the necessary changes in their operation and to resubmit their applications, for certificates.

HUSKY FOR SALE—The Canadian firm, Fairchild Aircraft, Ltd., Longueuil, Ont., is negotiating with Nickel Belt Airways Ltd., Sudbury, Ont., to take over jigs and tooling of the Fairchild Husky, high wing single-engine bush cargo plane, for possible future production. The Fairchild concern, one of Canada's oldest aviation companies, has announced it is going out of business. The Husky was developed as a postwar type for the bush flyers of the Northwest, and the prototype was flown, but it was not produced in quantity.

LOW-FLYING ENFORCEMENT—A CAA summary of activities to curb airplane noise and "make the airplane a good neighbor" indicates a growing policy of "cracking down" on low and reckless flying both by state and federal aviation officials, and with some assistance by local law enforcement officials. CAA's first region with headquarters in New York City reports it has "processed more than 300 violation actions against pilots for low or reckless flying or both," in the last five months. In November alone, CAA region 2 office (Atlanta) handled 24 violation reports on low flying and buzzing of houses, three of which resulted in crashes with fatalities in two cases. The cooperation between federal, state and local enforcement of regulations against reckless flying may be further strengthened if action is forthcoming on the recent recommendation of the National Association of State Aviation Officials that the Civil Aeronautics Act be amended to authorize state courts to suspend or revoke federal airman's certificates with cause after due process of law.

NEW DEALER'S GROUP—Independent Aeronautical Dealers Association, Inc., New York, has been chartered as a membership corporation without capital stock by five directors. Purposes of the organization are outlined as maintaining high standards of members, exchanging business information, establishing a central credit bureau, etc. Directors named are: Ethel Carruthers, and Clarence Carruthers, New York, Joseph Alterascu, Spring Valley, N. Y., Sallie Halstead, Ossining, and Lewis H. Pomper, 270 Broadway, N. Y., who is also attorney for incorporators.

THROAT CUTTING—Airplane dealers who use unfair and unfounded criticism of competitive planes in an effort to create sales for their own merchandise are cutting their own throats, as well as those of their competitors, Joseph Geuting, manager of the Personal Aircraft Council, recently advised the California Aviation Trades Association. Geuting reviewed a bill of particulars listing airport service demands of companies representing a wide variety of interests as including: better ground transportation; good tie-downs, airports closer to community centers; office and parking area plainly marked; clean rest rooms; good food and dining facilities; flat rate repair service; standardized field rules; bigger and better wind indicators; more hangars and better airport marking.

CONVAIR CAR REPORT—West Coast reports say that some outside interests are approaching Consolidated-Vultee with suggestions to take over the flying automobile experimental project, if the company should decide to shelve it as too experimental and long term a project for present investment. Another report is that Convair may set up a subsidiary development corporation just to handle future development of the flying auto.

—ALEXANDER McSURELY

CAA Grants Funds For Airport Work

CAA has announced that up to Dec. 17, grant offers to sponsors of 127 local airport projects, totaling $12,966,628 have been made under the federal aid airport program. Breakdown shows 34 grants were for class 1 airports totaling $1,754,853; 37 grants for class 2 airports, totaling $1,666,481; 51 grants for class 3 airports, totaling $7,836,459 and 5 grants for class 4 and above fields. totaling $1,708,835.

Analysis of the report shows that approximately $9,000,000 of the grants went to class 3 and larger airports, while class 1 and 2 airports although receiving larger number of grants, received in total only about one-fourth of the funds granted.

▶ **CAA Criticism**—CAA has been subjected to recurring criticism by state and local officials for failure to administer the program to provide for the smaller airports. A 1947 Airport Construction program announced last Jan. 11 by Administrator T. P. Wright called for construction or improvement of 800 airports. Comparison of this figure with the accomplishment reported as of Dec. 17, shows that less than one-fourth of the 800 had received grants by virtually the year's end.

However in August, the 1947 and 1948 programs were merged into a combined program calling for tentative allocation of $64,816,515 to 896 sponsors and $2,168,700 in the territories, and $17,524,250 in a fund for special grants at the administrator's discretion.

▶ **Seek Simplification**—A recent Washington conference between CAA airport officials and representatives of the National Association of State Aviation officials, was called in an effort to obtain some simplification of the federal red tape, legal and engineering, which has been hamstringing the efforts of small airport sponsors, to obtain federal grants. Report on whatever simplification was achieved at that conference is expected shortly.

Northwest Changes Hands

Northwest Aviation Sales at Portland (Ore.) Troutdale Airport, has been named Oregon distributor for Texas Engineering and Manufacturing Co.'s two-place Swift 125 personal plane. Negotiations recently transferred management and operation of Northwest to Ted Lewis, Dale Hall and Fred Cheek, three World War II veterans. Floyd O. Johnson, former president, plans an extended vacation after which he will rejoin the organization in a sales position. The new operators plan to expand facilities and service of the operation.

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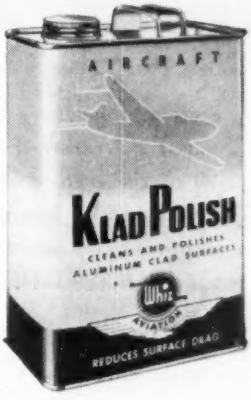

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Pesco HYDRAULIC PUMPS FOR AIRCRAFT

A BORG-WARNER B-W INDUSTRY

Designed to meet requirements of AN-P-11a

Pesco manufactures hydraulic pumps to meet every aircraft requirement. Five of the models are listed below. All of them are designed to meet the specifications of AN-P-11a. All feature "Pressure Loading" . . . Pesco's exclusive development which *automatically* maintains minimum clearance between pump gears and bearings, making possible continuous high operating efficiencies over a wide range of altitudes and temperatures. Tests are being conducted which indicate these pumps can be operated at a maximum pressure of 3000 p.s.i.

Pesco Model	Capacity g.p.m. at 1500 r.p.m.	Rate Pressure	Drive & Pad AND No.	Ports	Weight
IP 790-A	1	1500	10001	$\frac{7}{8}$—14	4.1 lbs.
IP 790-B	1	1500	10000	$\frac{7}{8}$—14	3.5 lbs.
IP 792-A	2	1500	10001	$1\frac{1}{16}$—12	6.5 lbs.
IP 793-A	3	1500	10001	$1\frac{1}{16}$—12	6.7 lbs.
IP 794-A	5	1500	10001	$1\frac{5}{16}$—12	10.9 lbs.

For complete information and specifications on any of the above hydraulic pumps, or any adaptation of them, write today to Department 5-1.

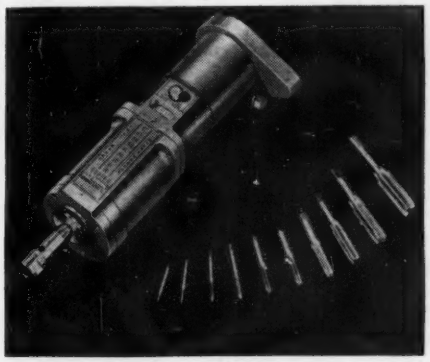
Pesco PRODUCTS DIVISION
BORG-WARNER CORPORATION
11610 Euclid Ave. - Cleveland 6, Ohio

MANUFACTURERS OF B-W SUPERCHARGERS

NEW AVIATION PRODUCTS

Wide Range Tapping Head

New tapping head, claimed as permitting replacement of three conventional tappers because it handles taps from No. 0 to ¾ in., is designed to fit any drill press. Device employs spring clutch drive and adjustable torque control, and is claimed as suited for cycle tapping and o.d. threading, as well as



routine machine tapping. Accurate blind hole tapping is stated as accomplished without damage to taps and equipment. Spring clutch drive is said to eliminate slippage and wear and only small force is required for engaging and disengaging. Torque control, preset for size, permits tap to move into and out of work with automatic sensitivity, to assure maximum tap protection and perfect tapping. Torque can be set when tapper is on or off drill press. Maker is **Commander Mfg. Co.**, 4225 W. Kenzie Street, Dept. AW, Chicago, Ill.

Rectifier for Photo Mapping

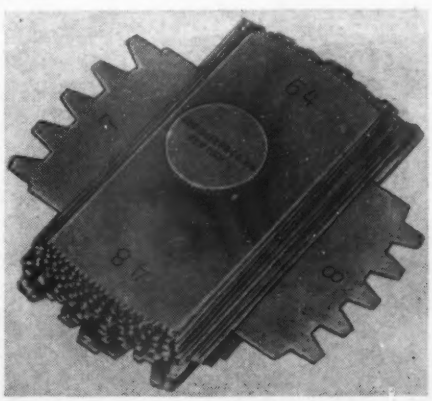
Scheduled for commercial availability in 1948, first automatic focus rectifier to be produced in this country for mosaic map making is announced by **Bausch & Lomb Optical Co.**, 635 St. Paul St., Rochester 2, N. Y. Resembling ordinary photo enlarger, device simultaneously enlarges, prints, and automatically reduces aerial photographs to common scale and level, correcting tilt encountered as result of plane's variation in angle and level at time photos are taken. It can be operated by photographer, turning out one rectified print every 5 min. Capable of being mounted on trailer truck for use in field work, unit has fluorescent illumination, enlarging lens of high optical resolution, and is constructed to maintain constantly proper alignment between negative and printing easel. One pushbutton operates device which compensates for tilt of plane, and can accommodate tilts as high as 20 deg.; second button automatically brings photos taken at varying elevations to desired map scale; and third button controls swing, re-establishing in instrument, plane's angle of deviation from true course.

Antenna Tester

Self-contained field strength indicator for testing instantaneously antenna output of aircraft radios is portable, weighs but 1 lb., and consists of small box and telescoping antenna. Marketed by **National Aeronautical Corp.**, Wings Field, Ambler, Pa., as Narco T-1, unit contains broad band untuned crystal detector coupled to output meter measuring relative power of transmission. Response is to all frequencies between 100 kc. and 150 mc. making possible check of antenna output on both low frequency and VHF transmitters. In operation, device is placed on external surface of craft whose transmitter is to be tested, normally on cowling in front of windshield to enable mechanic to read output signals on meter while operating radio from cockpit. Equipment is stated to be particularly useful for tuning transmitter for maximum output.

Handy Gear Gage Set

For aircraft industry gear designing, manufacturing, and maintenance phases, is new gear gage set marketed by **George Scherr Co.**, 200 Lafayette St., New York 12, N. Y. Made of stainless steel, set consists of 12 leaves including 24 different gear shapes of these diametrical pitches: 3 to 12; 14 to 32 by 2s; and 36, 40, 48, and 64. Teeth have correct involute shape, machined with special fixtures by Fellows gear shaper generating method. Segment blanks of each pitch are first turned in fixtures to conform to full diameter in accordance



with number of teeth for full circle. Gages are made in 14½ deg. pressure angle, and are available to order in 20 deg. and circular pitch.

Portable Attachments for Drills

Supplementing electric hand drills and drill presses in fixed base repair shops, four new lightweight, interchangeable, labor-saving attachments are intended for sanding, driving screws, polishing, grinding, and filing, in addition to sawing metal, plastic, and wood. Components are: Saw and file attachments for converting regular spinning motion of drill into fast forward-backward motion; three-inch disk sander

stated to be particularly valuable where larger tools cannot reach work; and screwdriver attachment accommodating socket bits and Phillips driver bits, with screw finder to keep driver on screw head. Maker is J. D. Whittle Co., 208 N. Wells St., Chicago 6, Ill.

Information Tips

Injection System Manual

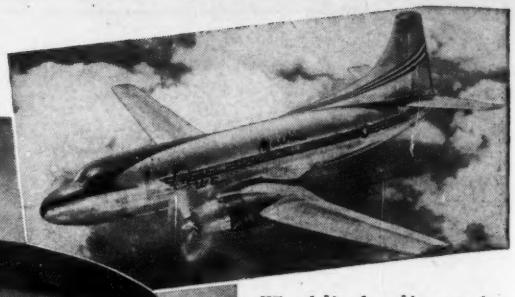
New illustrated handbook and instruction manual, No. 39271, issued by **Ex-Cell-O Corp.**, 120 Oakman Blvd., Detroit 6, Mich., supersedes previous manuals and describes company's models B4 and B6 fuel injection systems. Given are details covering operation, installation, maintenance, and service of equipment. Handbook section is devoted to system characteristics, and is illustrated with charts and other pertinent data useful to management officials and engineers engaged in the design, manufacture, and sale of spark-ignited engines. Booklet, 8½ × 11 in., is bound in water-and grease-resistant cover. Price is $1.00

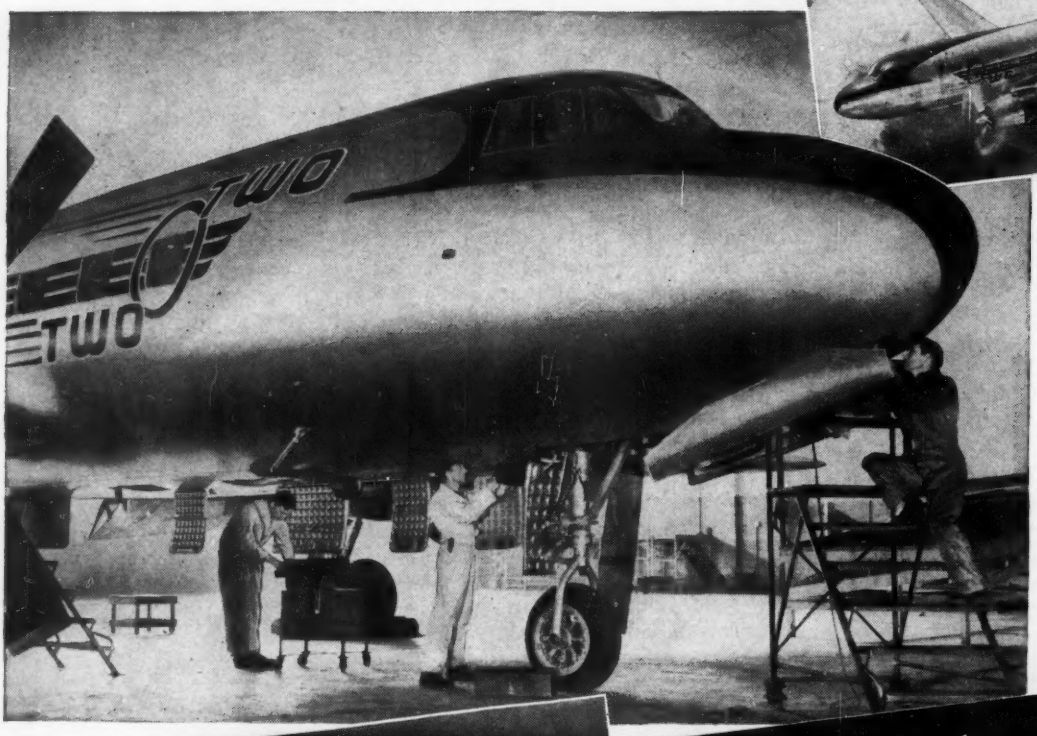
Rivet-Holing Details

Affording data on punching rivet holes in sheets, angles, and extousions, new illustrated catalog C, issued by **Wales-Strippit Corp.**, 345 Payne Ave., North Tonawanda, N. Y., describes punching equipment for rapid setups and reduction of press-down time.

Case-History of Metal Working

Titled "Cross Section of Work Performed on Drilling, Boring, Facing, and Tapping Machines for Metal Working Industry," 88-page brochure issued by **National Automatic Tool Co.**, Richmond, Ind., contains 66 case histories of various parts machined on company's equipment. Full page is given to each case and provided are blueprints and explanation of production, number of holes and operations, hole sizes, limits, and materials. Jobs shown require meeting demand for very high production, others to hold very close limits, close hole centers, or combination of these at lowest hole cost.





World's leading twin-engine airliner, the Martin 2-0-2, features provisions for low-cost maintenance.

Easy to "Get At.."

Even the Martin 2-0-2's fuel cells are easily and quickly installed or removed. Tough, flexible Mareng fuel cells, an exclusive feature of the Martin 2-0-2, eliminate excessive riveting, intricate corner assemblies and troublesome metal work. Keep fuel cell maintenance costs at a minimum. Bring increased safety and dependability to the Martin 2-0-2.

Power plant and engine accessories are easily reached through large access doors. Hatch in firewall is 22" by 24"—large enough to admit a man's head and shoulders—and give access for servicing starter, generator, carburetor and other power plant accessories. Side opening facilitates major maintenance —saves time, cuts cost.

One hundred twenty servicing and maintenance access provisions. That's what makes the Martin 2-0-2 so easy to "get at." Conveniently located throughout the 2-0-2, numerous doors and hatches facilitate routine service and major overhauls . . . expedite non-scheduled repairs. Main illustration shows accesses to the prime maintenance compartments in the under-floor section of the fuselage. Each compartment contains a major maintenance location with accessories grouped according to class. Each is illuminated by built-in flood lights. Each is conveniently reached from ground-standing position. These and other built-in, time-saving features bring new, low-cost maintenance to airlines operating Martin 2-0-2's.

THE GLENN L. MARTIN CO., BALTIMORE 3, MD.

Martin
AIRCRAFT

Builders of Dependable Aircraft Since 1909

FINANCIAL

Equipment Interchange Decision Promises Better Routes, Service

CAB approves TWA-Delta agreement which may set pattern for halting duplication of route structures and for reducing operating costs.

Sounder route structures and improved passenger service may evolve as a result of the type of equipment interchange agreement recently approved by the Civil Aeronautics Board between TWA and Delta. This agreement will permit the transportation of passengers, mail and property between points on Delta and TWA routes without the necessity of changing planes at Cincinnati, Ohio. It will now become possible to provide single plane service over the routes of two separate systems. In this instance, passengers will not be required to change planes on trips originated by TWA from Detroit, Toledo and Dayton, for example, to Atlanta, Miami and other points on Delta's routes in the south and southeast.

The further utilization of the equipment interchange principle may bring to a halt any additional duplication of route structures throughout the country. In the past, one of the most potent arguments advanced for route extensions was the aim of the carrier to provide single plane service for its passengers over wider areas of territory. As a direct result, many routes are paralleled three- and four-fold. A number of observers have maintained that this intensive blanketing of routes has led, in a large measure, to the thinning out of airline resources.

▶ **Arrangement Not New**—The current TWA-Delta arrangement represents no new departure, although it contains many refinements and improvements over preceding equipment interchange deals.

United Air Lines and Western were the first to interchange equipment under an agreement filed in March, 1939, with the Civil Aeronautics Authority, predecessor to the Board. Provision was made for through sleeper plane service at Salt Lake City, Utah, obviating an inconvenient change of equipment at that point for passengers traveling between Los Angeles and points east of Salt Lake City. The absence of this agreement would have made necessary, for example, a change of planes at Salt Lake City by westbound passengers at 5:30 a.m. and by eastbound travelers at about 4:00 a.m.

▶ **Settlement Reached**—A very difficult situation between Pan American Airways and Pan American Grace Airways was settled amicably last May through the equipment interchange device. Previously, Panagra had persistently attempted to gain a direct entrance into the United States but was balked in this direction by Pan American Airways. Ownership of Panagra was and continues to be divided equally between W. R. Grace & Co., steamship and banking interests, and Pan American Airways. At that time, Pan American operated between Miami, Fla., and the Canal Zone, and from New Orleans, La., and Houston and Brownsville, Tex., to the Canal Zone, making connections at that point with Panagra.

Pan American also operates between Miami and Buenos Aries, Argentina, by way of points in the Caribbean and on the east coast of South America. Panagra operates between the Canal Zone and Buenos Aries via various points on the west coast of South America. Accordingly, a direct entrance by Panagra into a United States gateway would have diverted considerable traffic from Pan American Airways and was fought by the latter for this reason. Considerable litigation before the courts and the CAB resulted, with no satisfactory settlement. As a direct outgrowth, a through flight agreement between Pan American Airways and Panagra was arranged and approved by the Board. Under this arrangement, Pan American charters the aircraft operated by Panagra into the Canal Zone from Lima or points farther south for through operation in Pan American's scheduled services from the Canal Zone to the continental United States. The operation of Panagra aircraft and crews over Pan American routes north of the Canal Zone is Pan American's responsibility, while the operations south of Balboa are under the control of Panagra. Provision is also made for various additional cooperative flights following this basic pattern. Among other things, Pan American also overhauls at its Miami base Panagra's flight equipment, whether of the type chartered by Pan American or otherwise. Pan American has also agreed to train Panagra pilots in any training centers operated by the former in the continental United States.

▶ **Reasons Given**—The major reasons advanced in this instance were: 1) It will eliminate the inconvenience to passengers, and the additional handling of mail and freight arising from the necessity of changing planes at Balboa; 2) it makes available to Panagra, Pan American's maintenance, training, and sales facilities in the United States; and 3) it will enable the Panagra-Pan American Airways service to develop traffic between the United States and South America and to compete more effectively with other carriers, American and foreign flag, operating over this route.

The more recent TWA-Delta arrangement contains many similar features but of course applies to the domestic route pattern. The interchange agreement provides that each carrier shall overhaul its own equipment. TWA will perform ordinary line inspections on Delta's operations while in its possession. A Delta maintenance supervisor will instruct TWA personnel in Detroit with respect to Delta's equipment and the latter's procedure prior to the inauguration of operations. At the outset, it is proposed to use only Delta's DC-3 and DC-4 equipment in the interchange service operations. Various arrangements will be made to coordinate operations. The general details surrounding this agreement appear very thorough and go far in anticipating the various operational difficulties that may develop in an arrangement of this type. It is for this reason that the TWA-Delta agreement will be watched closely and may set a pattern for other such deals.

The ideal air transportation system, from the standpoint of the traveling public, would provide single-plane service between any two points in the United States. The cost of providing such a service through one-carrier operations would be prohibitive to say nothing of the economic waste created. There are many pairs of points in the United States, however, providing connecting services which do not generate sufficient traffic to justify the certification of competing one-carrier service but which could be afforded single-plane service. Through the device of interchange equipment by two or more carriers, one-plane service could be established without the necessity of extending authorizations of existing carriers with the attending uneconomic paralleling and disastrous competition. Certainly, any feature holding forth the promise of increasing service to the public and decreasing operating costs is deserving of careful consideration.—Selig Altschul

NWA Shows Interest In BOAC Connection

Link at Hong Kong hinted in recent Far Eastern trip by NWA president.

TOKYO—Link up of Northwest Airlines and British Overseas Airways at Hongkong is very much in the wind following NWA President Croil Hunter's recent business trip around the Far East.

Northwest has been looking for a round-the-world connection to replace the Trans World Airlines set-up. It looks like BOAC is just what they want. Hunter's talks in Hongkong cleared the way for an early arrangement.

Other Northwest developments which will result from Hunter's trip to the Far East:

(1) Early survey of shuttle service from Tokyo to Seoul, Korea, to Peiping, China. Already operating to Seoul, NWA hopes to tap a large tourist market among occupation personnel in Japan who want to see Peiping.

(2) Reduction of Northwest's fare from Manila to San Francisco. Previously its passengers bought a ticket to Seattle, then had to buy an additional ticket for the Seattle-San Francisco hop. New fare would be the same as other carriers and can be justified by shorter mileage.

Early use of Boeing Stratocruisers on the Pacific routes is just rumor. Airline officials admitted to AVIATION WEEK that the Boeings won't be utilized until careful study has been made of passenger statistics.

While the big planes provide comforts, they carry a lot of passengers. There must be more business than is now generated to put three Stratocruiser flights per week across the Pacific.

One Stratocruiser could handle Northwest's transpacific weekly load of about 40 passengers and 3,000 lb. of mail and express. The airline not only wants to maintain its present thrice weekly service but is anxious to increase the schedules to five weekly.

It is a good bet that Northwest will not inaugurate regular Stratocruiser service until larger business loads are assured. Complete opening of Japan to foreign travel, with an anticipated large tourist business, probably will mark the day when the Boeings are put on the run.

Italy Ponders Merger For Internal Airways

MILAN—The Italian government is considering a merger of many of the country's internal airways, including Italian Air Lines, Teseo, Alcione, Transadriatica and Sisa.

Italian air transport lines, meanwhile, are showing preference currently to high value cargoes over perishable goods. Furs, watches and Swiss textiles are supplanting fresh fruits and vegetables inasmuch as the carriers are held liable for the loss of perishable goods through delays caused by bad flying weather.

Two recent developments in Italian aviation saw KLM, Royal Dutch Airlines, authorized to start regular weekly service between Rome, Casablanca, Rio de Janeiro, Montevideo and Buenos Aires, and negotiations opened between the Italian and Russian governments to allow Airone Compagnia di Navigazione to include Belgrade, Sofia and Bucharest in its regular Moscow service.

Fares Increase in India To Offset Rising Costs

NEW DELHI—A 10 percent increase in passenger fares has been sanctioned by the Air Transport Licensing Board on the plea of Indian airlines that operating costs have been increasing steadily.

The increase, however, applies only to lines whose fares have been less than 8 cents a mile, and sets that figure as a ceiling for all fares.

Biggest reason for the increase in costs, according to industry figures, is the sharply increasing shortage of trained personnel in the country which has resulted in a bidding-up of wages far beyond what they were a year ago. The situation is the result of many ambitious programs of expansion.

Tenders Invited

JOHANNESBURG—The Union of South Africa is inviting tenders for operation of a new Amsterdam route, the first of several such routes slated for private operation.

NWA Officials Double as Crew

World News correspondent rides with Co-pilot Croil Hunter in Orient.

By ALPHEUS W. JESSUP

OVER THE INLAND SEA—There haven't been many commercial air flights like this with such a high-powered crew. Flight 800, Tokyo-bound from Shanghai and pushed along by a strong tail-wind, will set down about an hour early at Haneda.

Co-pilot Croil Hunter, president of Northwest Airlines, just came back to show me our location and point out Hiroshima just off our port wing-tip.

And here is the Chief Stewardess, Mrs. Hunter, with my lunch. If I hadn't been tipped off that this was her first trick at the job, I would have taken her for an old hand. She has been busy as a bee ever since we boarded the ship at Lungwha: hanging up coats, buckling seat belts, passing out magazines and newspapers, serving cocktails and cooking my lunch. Apparently Croil conducts a top-flight training program at home.

Other members of the crew are Navigator Bill Stern, director and executive assistant to the president of Northwest, and Steward Don King, vice president for the Orient.

AVIATION WEEK's Tokyo Correspondent, Bill Jessup (left), talks with Croil Hunter, president of Northwest Airlines, at Shanghai before emplaning for Tokyo. Mr. Hunter, returning from a five-week business trip in the Orient, couldn't get passage on his own airplane, had to work his way back to Tokyo as co-pilot.

Their story is that there wasn't any space on the plane for them this morning except as crew members. I have a suspicion that Croil is making his party work their way home from a five-week business survey trip in the Far East.

If they are all as good at their jobs as Mrs. Hunter, it's a number one crew.

Airport Negotiations Under Way for Turbigo

MILAN—Swedish air interests are negotiating with the Italian government for the formation of a stock company to operate the Turbigo (Novara) airport as a part of their transcontinental chain. The Swedes will subscribe 51 percent of the stock to the Italian government's 49 percent. The latter has made an allowance of 100 million lire to refit the airport.

BEA is reported to have offered the Consorzio Autonomo del Porto di Genova financial assistance for the construction of an airport at Genoa, west of the harbor.

Panair do Brasil Ownership Shifts

RIO DE JANEIRO—Panair do Brasil now is 52 percent owned by Brazilians and 48 percent by Pan American Airways. Transfer of some 40,000 shares here last month swung the balance away from the parent company. Actually, Pan American probably still will have what amounts to control, since it would be difficult to get simultaneous action from the hundreds of Brazilian shareholders.

Panair do Brasil led all Brazilian airlines in 1946 in distance and hours flown and passengers carried, followed closely by Cruzeiro do Sul, which was tops in baggage and mail transported.

Australian Policy Set On Dollar Area Travel

No immediate reduction in air services between Australia and the U. S. is in prospect as a result of the Commonwealth government's ban on tourist and private travel to dollar areas. In the future, travel to the U. S. will be restricted to business trips which are important to essential industries. British Commonwealth Pacific Airways planes leaving the U. S. for Australia are booked solid for some time to come, although northbound bookings are very light.

Trans-Australia Loses

MELBOURNE—Trans-Australia Airlines incurred a loss of £505,927 (about $2,023,000) in the year ended June 30, according to the long-awaited first statement since inception of operations as a government-owned airline. No allowance is made in the balance sheet for interest on treasury advances in amount of £2,170,000.

TAA suggests that the debit balance on its operations is a reflection of establishment costs rather than of operating loss.

Paris Letter:

Orly Field Recalls ATC Days

PARIS—If you fly in these days to Orly Field, Paris' transatlantic airport, you're not apt to notice much change from the days when Air Transport Command ran the show after having built up a secondary airport to a major world base. But if you taxi over to the north edge of the field, where Air France checks and repairs its planes, you'll find a whole new center of activity.

Operations at the field itself are carried on, under the French administration which took over about a year ago, in the same wooden offices thrown up by the AAF. The control tower uses ex-Army equipment and even, with a touch of humor, keeps its log in English. Remaining ATC activities are relegated to a small corner of the installations.

A new 9,700-sq. ft. wooden passenger shed has been erected by the French and finishing touches are now being made to a second passenger building in concrete, with 16,000 sq. ft. of space and a restaurant. But both of these are considered temporary.

"We have a gigantic long-term plan," points out Henri Drouet, assistant commandant of the field. "It includes 30 airstrips, a pipeline, changing the route of the main highway which runs beside the field. It would cost $500 million."

This plan remains in the dream world for two reasons. "You can imagine the first reason," continues M. Drouet. "Our government just hasn't that sort of money for airports these days. In the second place, air transport needs currently are in such a fluid state that it is hard to tell what requirements will be ten years hence. Besides, Orly's present traffic of 40 to 60 arrivals or departures daily—almost all transatlantic—is not excessive."

At present the field has two strips —a one-mile E-W strip set up for GCA, and a 1¼-mile N-S strip set up for SCS-51. An uncompleted second E-W strip will be finished out to 1¼-mile length this spring, and plans call for contruction of a 1.85-mile second N-S runway in the next couple of years.

* * *

Air France has shown a whirl of energy in the field's northern sector, where its Connies, DC-4s and other large transports are checked, overhauled and parts repaired. Starting late in 1946 five maintenance hangars of 26,000 sq. ft. each were transplanted from other fields and installed here. Eight hundred men are employed already in this activity, with such modern equipment available as a rolling test bank for flight instruments.

At the same time, a three-story former school building was taken over and turned into a plant for parts repair with six shops of 3,200 sq. ft. each, employing 400 men. These shops test and repair circuits (hydraulic, vacuum, gas, oil); clean radiators, test and repair starters and landing gear; copy unobtainable elements of parts for replacement, with a dozen modern machine tools; repair and transform propellers and blades; test and repair electric motors and radio; test and repair flight instruments including automatic pilots.

Most of the equipment employed is American (and most of the parts repaired are also), with much of the equipment coming from surplus. An effort is being made to build up a stock on hand of the 3,000 different parts and accessories which have been or may be called for. So far the stock is far from complete, though the great bulk of them has been ordered.

* * *

Air France expects to centralize all its repair activities at the Orly shops. To this end nine new hangars are going up, with total floor space of 195,000 sq. ft. Five are completed. The first will start repairing propellers in January, the next four will be repairing engines by March (all engine repairs are now shipped over to the Hispano-Suiza factory), and the remaining four should house some of the other shops by late spring. Later special motor test banks and two more maintenance hangars will be built.

While this maintenance and repair set-up is available to such lines as TWA on an exchange basis, there is not generally much call on it by companies other than Air France. But as a standby, and especially after the new services get fully shaken down and experienced, it should be of real value to all long-distance lines touching France.

—Michael Marsh

Post Office Air Mail Estimates Support Stand Against Rate Boost

Figures show present 5 cent domestic postage rate would bring best results in the long run; airlines protest allocation formula used to determine costs.

Post Office estimates that show steady increases and eventual profit at the present domestic air mail rate of 5 cents an ounce are forming the basis of the Department's efforts to curb a Congressional impulse aimed at boosting the postage rates.

A return to the 8 cent postage level, the Post Office believes, would cause pieces of air mail to decline from 626,000,000 in fiscal 1947 to 572,000,000 in fiscal 1948, 538,000,000 in fiscal 1949 and 511,000,000 in fiscal 1950. Under the present 5 cent rate, the Department expects volume to increase from 820,000,000 pieces in fiscal 1947 to 1,000,000,000 in fiscal 1948, 1,250,000,000 in fiscal 1949 and 1,563,000,000 in fiscal 1950.

A dollar and cents interpretation as offered by the Post Office in recent testimony before the Air Mail Subcommittee of the House Post Office Committee (AVIATION WEEK, Jan. 5) would show a $9,088,000 profit by 1950, should the 5 cent air mail rate stand. An increase to 6 cents air mail would only show a $358,000 profit in that year, while a return to the 8 cent domestic postage rate would result in a deficit increase to $27,774,000 by 1950.

► **Service Rate Deficit**—A deficit on 5 cent domestic air mail would have been reported by the Post Office in fiscal 1947 even if all carriers had received the 45 cents a ton mile service rate paid American Airlines, Eastern Air Lines, United Air Lines and TWA. But a straight 45 cent service rate for all carriers would give the Post Office a $368,000 profit at the 5 cent postage level in fiscal 1948 and a $28,596,000 profit in fiscal 1950.

The certificated airlines during testimony before the House Air Mail Subcommittee charge that cost ascertainment methods of the Post Office discriminated against air mail. Robert Ramspeck, executive vice president of the Air Transport Association, said the Post Office Department's own records show the total net cost of air mail since 1918 is less than $45,000,000 despite unfair cost allocations.

► **Cost Allocation Hit**—Ramspeck asserted that the Post Office in 1946 charged 3.6 percent ($8,500,000) of the total cost of city mail carriers against air mail. This allocation, he said, is not based on the proportion of pieces of air mail delivered to the total pieces of mail delivered, but is made on the basis of the classes of mail delivered at each stop by the city mail carrier.

"If the city carrier delivers one air mail letter and 20 regular mail letters at one stop on his route, half of the cost is allocated to air mail and half to regular mail under the present system," the ATA official declared. "If the allocation were proportionate, air mail would have received only 2 percent of the city carrier allocation in 1946. This one error, which presumably has been committed in the cost ascertainment section of the Post Office for many years, would go far to eliminate the so-called deficit in the air mail service since its inception."

► **Non-Airline Expenses**—Contrary to popular belief, the airlines do not receive the bulk of the air mail expense dollar as presently allocated by the Post Office. In fiscal 1948, at the 5 cent postage level, the Department will pay the domestic airlines about $41,678,000 while other expenses of the air mail service (as previously allocated) will eat up $44,440,000.

Ramspeck told the Congressional subcommittee that 92.3 percent of the domestic air mail dispatched in 1947 was carried by airlines receiving mail pay determined by CAB to be no more than compensatory. The remaining 7.7 percent, he declared, was carried by airlines, including feeders, which in general provide what may be considered "an RFD air mail service."

Post Office Dept. Domestic Airmail Estimates

(Results for fiscal 1947, 1948, 1949 and 1950 at postage rates of 8 cents, 6 cents and 5 cents an ounce)

Postage Rate	Fiscal Year	Number of Pieces	Avg. Postage Per Piece (Cents)	Total Revenue	Total Expenses Except Payments to Airlines	Payments To Airlines	Grand Total Airmail Costs	Net Deficit
8 cents	1947	626,000,000	9.37	$58,669,000	$37,585,000	$29,964,000	$67,549,000	$8,880,000
8 cents	1948	572,000,000	9.37	53,608,000	35,824,000	41,678,000	77,502,000	23,894,000
8 cents	1949	538,000,000	9.37	50,421,000	34,696,000	41,678,000	76,374,000	25,953,000
8 cents	1950	511,000,000	9.37	47,891,000	33,987,000	41,678,000	75,665,000	27,774,000
6 cents	1947	755,000,000	7.39	55,802,000	39,479,000	29,964,000	69,443,000	13,641,000
6 cents	1948	857,000,000	7.39	63,341,000	42,524,000	41,678,000	84,202,000	20,861,000
6 cents	1949	1,013,000,000	7.39	74,871,000	44,339,000	41,678,000	86,017,000	11,146,000
6 cents	1950	1,200,000,000	7.39	88,692,000	46,656,000	41,678,000	88,334,000	358,000(p)
5 cents	1947	820,000,000	6.4	52,480,000	41,869,000	29,964,000	71,833,000	19,353,000*
5 cents	1948	1,000,000,000	6.4	64,000,000	44,440,000	41,678,000	86,118,000	22,118,000
5 cents	1949	1,250,000,000	6.4	80,000,000	46,700,000	41,678,000	88,378,000	8,378,000
5 cents	1950	1,563,000,000	6.4	100,032,000	49,266,000	41,678,000	90,944,000	9,088,000(p)

*Actual fiscal 1947 deficit was $14,859,469 since postage rate was not reduced from 8 to 5 cents until Oct. 1, 1946—three months into 1947 fiscal year.
(p) Indicates profit.

CAB Issues Report On AA DC-6 Fire

Acting with unprecedented speed, the Civil Aeronautics Board early this month issued its official report on the accident involving an American Airlines DC-6 which caught fire in flight and made an emergency landing at Gallup, N. M., on Nov. 11.

Probable cause of the mishap—in which nobody was injured—was the entry of gasoline into the cabin heater combustion air intake scoop from the No. 3 alternate tank vent due to overflow during inadvertent transfer of fuel from the No. 4 alternate tank. This condition, CAB declared, was the result of improper location of the No. 3 alternate tank vent outlet and the inadequate instructions provided DC-6 flight crews concerning fuel management.

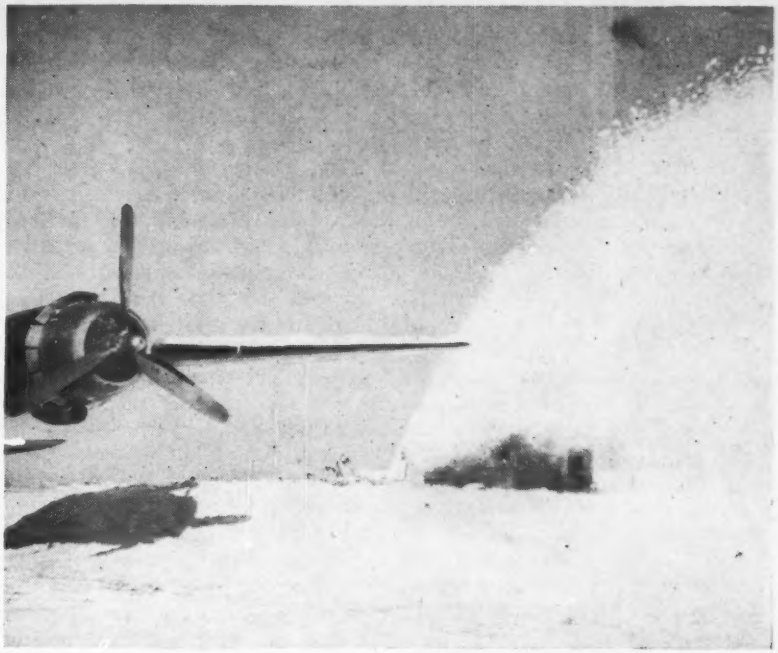
► **Modifications Under Way**—As a result of the Gallup accident and a previous United Air Lines crash at Bryce Canyon, Utah, the airlines grounded their DC-6s. Necessary modifications on the craft are now under way.

Inspection of the American Airlines DC-6's structure revealed extensive damage to the fuselage skin in the vicinity of the center section as a result of fire in flight and on the ground at Gallup. Damage to the fuselage skin extended up the right side of the aircraft to the bottom of the window line. A large portion of the cabin floor above the air-conditioning compartment was consumed by fire along with many components within that compartment.

► **Gasoline Flow**—Visual inspection of fuel stains on the fuselage skin emanating from the No. 3 alternate tank air vent outlet revealed a pattern of gasoline flow which was projected rearward from the outlet almost directly to the cabin heater combustion air intake scoop. Subsequent flight tests on other DC-6s verified the fact that gasoline overflow from the No. 3 alternate fuel tank in flight would enter the cabin heater intake scoop in large quantities.

The No. 3 alternate tank vent outlet was located on the right side of the fuselage, close to the leading edge of the right wing, almost adjacent to the lower wing fillet. Approximately 10 feet aft and slightly to the left of this outlet was the cabin heater combustion air intake scoop.

► **Instructions Lacking**—CAB said testimony of Douglas, CAA and airline personnel indicated that no tests were conducted, or any other attempts made, to determine whether any hazard was involved in possible overflow of fuel through the vent outlet into this scoop in flight. No instructions had been given airline pilots concerning possible dangers associated with overflow of gasoline from the No. 3 alternate tank.



SNOW SETS BACK LAGUARDIA TRAFFIC

Heavy drifts of snow at eastern airports such as LaGuardia Field, pictured above, caused nearly 50% of scheduled holiday flights to be canceled. A rotary snow plow is shown cutting lanes for landing strips and parking areas as airports tried vainly to resume service when the storm subsided. (Photo by N. Y. Journal-American from IN Photos)

PAA, Panagra to Raise Latin American Fares

Pan American Airways has filed new tariffs with CAB which provide for a 10 percent passenger fare increase over the company's Latin American routes effective Feb. 1. Pan American-Grace Airways has announced it will raise fares a similar amount on its South American west coast links.

"Increased costs of operation are responsible for the new fares," according to Willis G. Lipscomb, PAA vice president in charge of traffic and sales. "Pan American again will lower fares on these routes whenever decreasing costs make it possible. Generally, these tariffs still are well below prewar levels." He added that no fare raises on other PAA routes are in prospect.

TWA-Delta Interchange Agreement Approved

An agreement which will permit flights between points on TWA and Delta Air Lines routes without changing planes at Cincinnati has been approved by the Civil Aeronautics Board.

The proposed equipment interchange will provide single plane service between the TWA cities of Detroit, Toledo and Dayton, on the one hand, and Atlanta, Miami and other points on Delta's routes in the south on the other. The two carriers have been offering connecting service between those cities at Cincinnati since 1941.

In the foreseeable future, only Delta's equipment—both DC-3s and DC-4s—will be used in the interchange service. TWA will initiate a complete training program to familiarize its personnel with the Delta planes.

CAB said that in the present period of increasing costs invaluable benefits may accrue from an experiment in interchange operations. "Through equipment interchange, one-plane service can be established without the necessity of extending authorizations of existing carriers where such extensions are not justified by the traffic potential."

SAS Boasts Regularity

Scandinavian Airlines System reports that 32 of 60 eastbound and westbound flights made between New York and Scandinavia during a recent month were completed within an hour of the scheduled time. Four planes arrived more than an hour early and 24 more than an hour late.

Irish to Fly Atlantic

Irish Air Lines (AER Lingus) plans to inaugurate its transatlantic service Mar. 17 (St. Patrick's Day) with three flights weekly—two between London and Boston and New York and one directly to New York. The carrier will use Constellations.

BOAC Rolls Up $240 Loss Per Passenger

The largest British flag carrier, British Overseas Airways Corp., cost British taxpayers the equivalent of $240 for every passenger carried in its first year of operations ending Mar. 31, 1947, according to accounts made public in London. BOAC's statement showed a loss of $32,500,000 for the year.

The heavy deficit was attributed by the company to high operating costs of a motley fleet of planes including five different types, most of them, except for five American-built Lockheed Constellations, regarded as obsolete. Almost all the other planes were military conversions with high operating costs and relatively low payloads. Delay in putting into service new British civil aircraft types made necessary the use of the older planes. It was stated that operating costs were so high that BOAC could barely meet direct operating costs even when carrying capacity loads.

Many BOAC routes were booked to capacity for the whole year with an average load factor of 75 percent for all the long distance routes, including transatlantic. BOAC carried 129,928 passengers, for an average distance of 2,137 miles each or approximately 276,000,000 passenger miles. The record was marred by only three fatal crashes, and the company paid tribute to the safety record of crews and maintenance personnel.

Report predicted that "heavy deficits will inevitably continue until the corporation has the aircraft and facilities to make it financially self-supporting in international business."

British European Airways, also government-operated, showed a deficit of approximately $8,000,000 for its first year of operation in an accounting published last month. British South American Airways, third government-owned line, is expected to show a profit in its first year's accounts, to be reported soon.

CAA Makes Air Training Pacts in South America

Cooperative agreements with three South American countries for providing civil aviation technical assistance from the United States have been made by a CAA-sponsored mission which recently returned from a 17,000-mi. air trip to 10 countries. The mission, headed by Theodore C. Uebel, of CAA international services division, included representatives of CAA, State Department, Coast and Geodetic Survey, Weather Bureau, Office of Business Economics, and Office of Secretary, Department of Commerce.

Agreements with Colombia, Ecuador and Bolivia, provide for U. S. technical missions to those countries, which will serve as advisers on civil aviation problems in those countries for a period of six months to a year. Negotiations for similar agreements with Uruguay, Chile and Venezuela are reported "in advanced stages."

M. Cooper Walker, State Department aviation section, who was a member of the survey trip, said the technical missions will have an important effect on standardizing procedures and equipment in the South American countries, contributing to safety of our air carriers operating abroad, and export marketing of U. S. aviation products. The standardization also will affect hemispheric solidarity in the matter of defense, he said.

Graduates of CAA inter-American training programs are serving in aviation posts in many countries and as instructors. Need for capable aviation economist in many of the countries appeared urgent, the survey group reported, with airport engineers, and maintenance specialists also in demand.

Pan American Reports Record Traffic in 1947

Pan American Airways achieved the greatest volume of business in its history last year while extending its routes to Sydney, Australia; Johannesburg, South Africa; Tokyo and Shanghai.

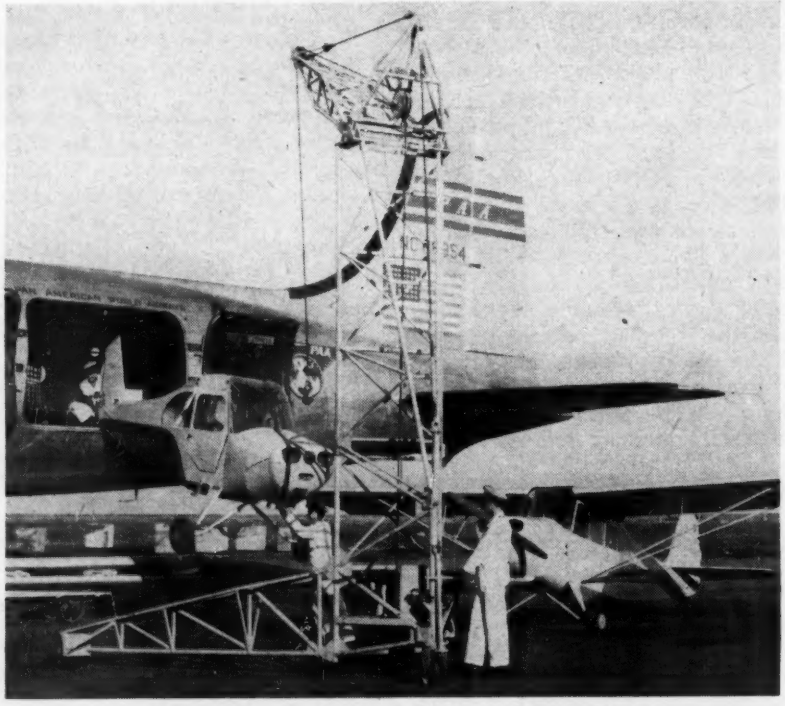
Using figures for the first 10 months of 1947 and estimating totals for November and December, Pan American reported carrying 951,450 revenue passengers in 1947 against 854,570 in 1946. The company flew 1,277,291,000 passenger miles in 1947 compared to 791,227,600 in 1946, and carried 31,371,240 lb. of cargo against 17,029,700 lb. in 1946.

On the Latin American division alone, PAA flew about 597,818,000 passenger miles last year compared to 527,244,411 in 1946. Cargo on the Latin American division was up 70 percent over 1946 and aggregated 26,334,000 lb.

Willis G. Lipscomb, PAA vice president in charge of traffic and sales, predicts 1948 will be another record year.

Ambulance Plane

The first airplane ambulance in western New York will be put into service by the Barrie Flying Service at Lockport soon, according to Harry Barrie, airport manager. The plane, a twin-engined Cessna, has been converted to hold a stretcher, with a separate room for a nurse and doctor. A complete first-aid cabinet also is included.



AERONCA AIR-SHIPPED TO HAWAII

A Pan American Airways DC-4 making its regular weekly all-cargo run to Manila and other Pacific points recently flew this dismantled Aeronca from San Francisco to Honolulu. The lightplane was delivered to the Hawaii School of Aeronautics for training. Aeronca's sales distributor decided to ship the plane by air because handling was minimized, expensive crating eliminated, and the craft could be put in service in Hawaii less than 24 hours after leaving California.

Travelers Polled

Importance of the price factor in the airlines' bid for a larger share of the travel market is pointed up in a recent nationwide survey made for the North American Newspaper Alliance.

Of the persons polled, 39 percent said they had made at least one trip of over 500 miles during the past year. With some respondents mentioning more than one type of travel, the survey showed 61 percent made their trips by automobile, 36 percent by train, 14 percent by plane, 6 percent by bus, and 1 percent by ship.

The group was also asked: "If the cost were the same, how would you go next time?" Result was automobile 46 percent, plane 29 percent, train 20 percent, bus 2 percent, ship 1 percent, and uncertain 2 percent. Thus the popularity of air travel more than doubled when the price factor was equalized.

U. S. Eyes Overseas Air Parcel Post

The Post Office Department has completed plans for early inauguration of air parcel post service between the U. S. and countries in Europe, the Middle East, Africa and the Near East.

Points where agreements for institution of the new service are anticipated include the United Kingdom, continental Europe, Bermuda, Newfoundland, the Azores, Iceland, Senegal, Gold Coast, Belgian Congo, Union of South Africa, Algeria, Tunisia, Egypt, Palestine, Saudi Arabia, Syria and India. Rates have not been announced, although they are expected to be lower than air express.

▶ **Weight Limits**—The country of destination has the right to determine weight limits of the parcels. Most large European countries now have a maximum of 22 lb. for parcel post, although the limit in some nations is 11 lb. or lower.

Besides transmission by air overseas, air parcel post will receive all available service by air within the United States from the place of mailing to the airport of embarkation for foreign points. Paul Aiken, new second assistant postmaster general, strongly recommended the new service, which may be the forerunner of domestic air parcel post.

▶ **Air Express Diversion**—Part of the poundage which U. S. flag carriers will fly abroad as air parcel post probably will be diverted from traffic now traveling as air express. But air parcel post, together with the proposed large-scale shipment of American newspapers to Europe to counteract Russian propaganda (AVIATION WEEK, Dec. 15), should bring considerable new revenue to the airlines.

Air Cargo, Inc., Pact Gets CAB Approval

The agreement by which 17 certificated domestic airlines established Air Cargo, Inc., as a ground service organization for handling freight and express has been approved by CAB.

Sanction was based on two conditions: 1. that Air Cargo, Inc., and its member carriers supply to CAB all agreements and information requested by the Board's Economic Bureau; and 2. that any holder of a certificate of public convenience and necessity issued by CAB and authorizing transportation of property be permitted to participate in Air Cargo, Inc., as a matter of right. The latter provision (already contained in Air Cargo, Inc.'s incorporation papers) would permit any all-cargo line which may be certificated in the pending air-freight cases to become a member of Air Cargo, Inc.

▶ **Functions Listed**—The Air Cargo, Inc., pact provides that member carriers agree to utilize that corporation in the

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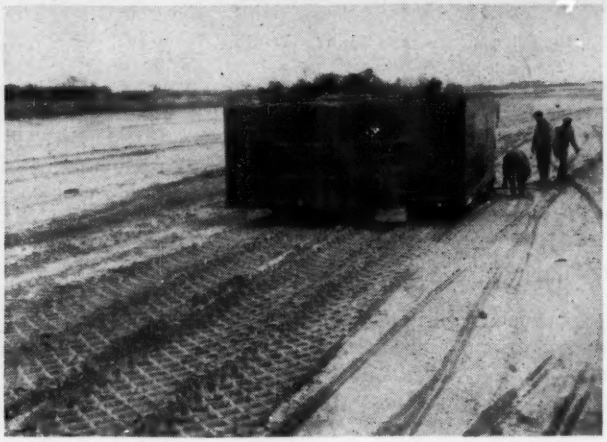

AIRPORT BUILDERS' 400,000-LB. ROLLER

Reported to be one of the heaviest contraptions on wheels, this giant 400,000-lb. roller is cutting time and building costs on Baltimore's new Class 5 Friendship Airport. Designed by O. J. Porter & Co., Sacramento, Calif., the $80,000 behemoth is equipped with four Goodyear 60-ply tires which are eight feet high and have a 30-inch tread. The compactor itself—of which only three models are in use—weighs 40 tons. When 80-lb. iron ingots are piled into its two boxes it tips the scales at 200 tons. As a 200-hp. tractor drags it along, the machine treads with a pressure of 9,600 lb. per sq. ft. Because of the extra-hard tamping done by the compactor, one layer of stone in the sub-base of runways and taxi strips can be omitted—saving up to $1,000,000.

performance of certain ground terminal operations connected with the transportation of air cargo—such as ground transportation incidental to airline hauls. The agreement also provides for facilitation of joint interline movement of air cargo via member air carriers; arrangement of joint interline agreements and services with other common carriers for over-the-road hauls; and the setting up of cargo terminals.

Air Cargo, Inc., will not have responsibility for, or control over, the rates, rules, regulations or practices applicable to air transportation. It will not issue or sign any shipping contract except as agent for a member air carrier and will not assume any responsibility to the consignor or consignee for any property transported by air.

▶**Setup Attacked**—Uncertificated air-freight carriers had attacked Air Cargo, Inc., as an instrument of monopoly. Air-freight forwarders also have regarded the organization as a threat to their interests. CAB found the Air Cargo, Inc., setup is consistent with the public interest and, therefore, not a monopoly.

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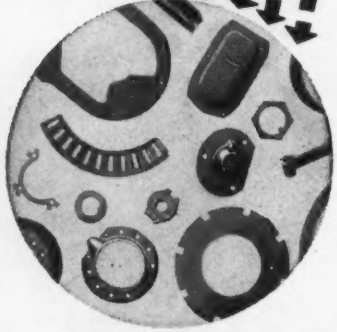

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CAB SCHEDULE

Jan. 19. Hearing on requests of Braniff and Chicago & Southern for removal of restrictions on Chicago-Houston service. (Docket 168 et al.)

Jan. 19. Oral argument on exemption of cargo carriers between Alaska and continental U. S. (proposed section 292.7 of Economic Regulations).

Jan. 27. Hearing on Taca, S. A., foreign air carrier permit renewal and amendment case. (Dockets 3016 and 3017.)

Feb. 2. Hearing on Board's investigation of airfreight rates. (Docket 1705 et al.)

Feb. 4. Hearing on Continental Air Lines' route consolidation case. (Docket 576 et al.)

Feb. 9. Hearing on Mid-Continent's application for alternate Kansas City-New Orleans route. (Docket 1956.)

Feb. 16. Hearing on additional service in New England area. (Docket 2196 et al.)

Feb. 21. Hearing on Mid-Continent's Minot, N. D.-Regina, Sask., route case. (Docket 628.)

Forecasts for 1948 Marked by Caution

Generally cautious predictions of things to come which have marked airline executives' approach to 1948 contrast with the unrestrained optimism expressed in many industry quarters a year ago.

Few officials have yet gone out on a limb in estimating 1948 traffic, remembering, perhaps, the predictions of 25-50 percent gains in passenger volume which failed to materialize in 1947. But American Airlines, the nation's largest domestic carrier, is planning on a 16 to 17 percent increase in passengers flown. Last year, AA flew about 2,750,000 passengers, 11 percent more than in 1946; and this year it hopes to reach 3,200,000.

Eastern Air Lines President E. V. Rickenbacker believes the industry will establish new records for dependable "on time" transportation in 1948 and will make great advances toward attaining its goal of all-weather flying. W. A. Patterson, United Air Lines president, sees air cargo—especially freight—becoming an increasingly important factor in his company's operations.

Croil Hunter, Northwest Airlines president and general manager, predicted a "substantial increase" in NWA's transcontinental passenger volume in 1948. He said business on Northwest's route to the Orient is exceeding expectations, adding that even greater demand for passenger and cargo space is anticipated when the Japanese peace treaty is signed this year.

SHORTLINES

▶ **American**—During 1947 carried about 2,750,000 passengers 1,500,000,000 passenger miles compared with 2,485,589 passengers and 1,308,000,000 passenger miles in 1946. Airfreight was up from 10,500,000 ton miles in 1946 to 16,350,000 in 1947. Express and mail volume showed little change over 1946. Company expects to have 12 all-cargo planes in service later this year.

▶ **Braniff**—CAB has ordered an investigation to determine whether the company's route 9 certificate should be amended to include restriction against nonstop operations between Lubbock and Austin, Tex.; Amarillo and Austin; Amarillo and Houston; and Lubbock and Houston. The Board said such services might divert a material amount of traffic from Pioneer Air Lines and cause the feeder serious financial injury.

▶ **Chicago & Southern**—Planned to inaugurate service to Hot Springs, Ark., on Jan. 9.

▶ **Eastern**—Employes on Jan. 1, 1948, numbered 7,660, an increase of 16 percent over the 6,600 employed a year before. EAL employment on V-J Day was 4,247.

▶ **Flying Tiger Line**—Flew 33,494,000 ton miles of high priority freight and 139,900,000 passenger miles during the 11-month period in 1947 when it operated C-54s in the Pacific area under contract to the Army's Air Transport Command. Company piled up 53,000 flying hours on the 42 Army aircraft assigned to it without a fatal accident.

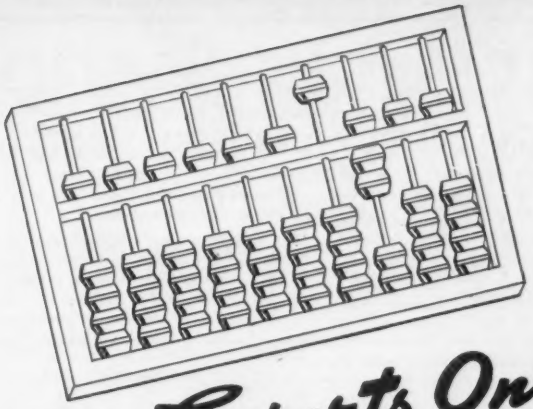
▶ **Mid-Continent**—Added 869 miles to its certificated route system in 1947, of which 635 miles were activated by year-end. The 234-mile link from St. Louis to Kansas City, granted by CAB in December, is to be opened shortly.

▶ **Northwest**—Reports generally favorable passenger comment on its Martin 2-0-2s. A questionnaire disclosed the soundproofing was approved by a comparatively narrow 832 to 648 vote, but the built-in ramp was indorsed 1,516 to 15, the square windows 1,613 to 4, and smoothness in flight 1,049 to 308.

▶ **Pioneer**—During November, 1947, flew three times as many passengers as in November, 1946.

▶ **Swedish Air Lines (ABA)**—Delivery of 10 DC-6s on order from Douglas Aircraft Co. has been delayed three months because of modifications. Original schedule called for deliveries between Dec. 17 and Dec. 28.

▶ **United**—Has bought 200 omni-directional radio range receivers from Collins Radio Co. The equipment will be installed on UAL's entire fleet of 144 planes.



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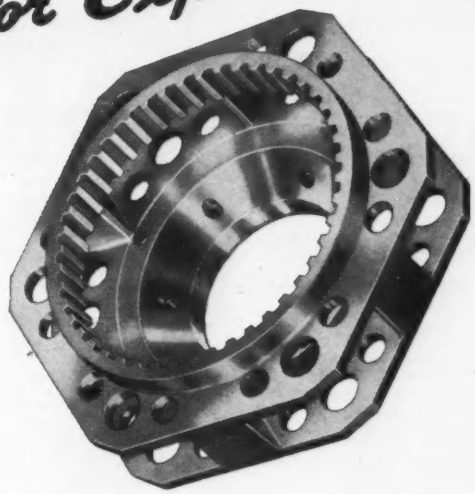

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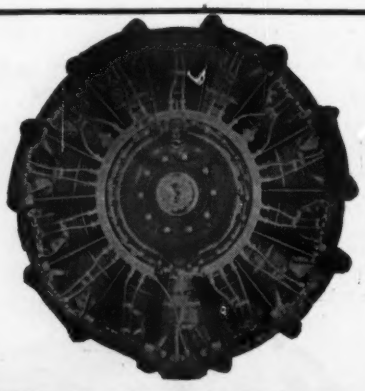

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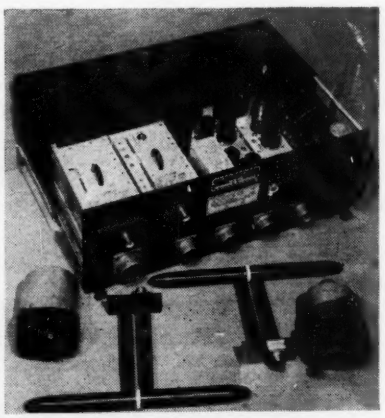

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The XS-1 Story—Pro and Con

Below are some outstanding comments by the press on AVIATION WEEK's story Dec. 22, reporting that the Bell XS-1 had flown faster than the speed of sound. In addition, the nationally syndicated column by Joseph and Stewart Alsop Jan. 4 said it is difficult to exaggerate the significance of the accomplishment.

TIME MAGAZINE (JAN. 5)—

FASTER THAN SOUND—The only known barrier to speed in the air has been pierced. This week the U. S. Air Force was ready to announce that a piloted airplane had broken through the transonic danger zone and that three Americans had flown faster than the speed of sound (760 mph. at sea level), faster than any men had ever flown before.

It was the longest step in aeronautical development since Orville Wright first flew at Kitty Hawk, N. C., 44 years ago. But the Air Force's pride of achievement was dulled by the fact that it had not succeeded in guarding the secret of basic aerodynamic design which had opened up the supersonic speed zone. The Air Force could and did keep secret the speeds which had been attained in its epoch-making flight.

The Air Force told its official story after AVIATION WEEK, a fortnight ago, published an account of the XS-1's successful flight, which the Air Force had hoped to keep secret. The significant security point was that the other nations already had pictures showing the XS-1's straight-wing design; the Air Force had unwarily released them 12 months ago. Much U. S. supersonic research—and presumably that of other nations—had been centered on a swept-back design. The effect of publication was to tell all other nations and potential enemies: Forget the swept-back design; as of now, at least, the straight wing is it.

AMERICAN AVIATION DAILY (JAN. 2)—

AIR FORCE REPRIMANDS AVIATION WEEK MAGAZINE—In an unprecedented action the Air Force has rebuked an aviation magazine and announced late Wednesday that the question of whether military secrecy has been violated has been turned over to the Department of Justice. . . .

The article in question concerns the supersonic flights of the experimental rocket plane, the XS-1, which received considerable press attention. It is understood that Secretary of Defense Forrestal had wanted AVIATION WEEK to destroy all of the copies containing the story when he learned of its being printed. . . .

Early Wednesday Secretary of the Air Symington announced a press conference to be held this morning. Late Wednesday afternoon the Air Force posted an announcement that the conference had been called off and that Mr. Symington had intended "to discuss security matters in connection with the XS-1." . . .

Secretary Forrestal had earlier invoked security regulations on such matters as high-speed flight, but the newspaper and magazine war-time press censorship codes expired quite some time ago. . . .

EDITORIAL, WASHINGTON EVENING STAR (JAN. 5)—

MILITARY SECRECY IN A FREE SOCIETY—Organized scientific research during the past war produced military weapons and devices that will change the nature of future warfare. Such organized research is continuing in peacetime. It is vital to national security. . . .

The proper protection of that sort of military-scientific secrecy in peacetime has become a complicated problem. As a free people, with a free press, we are suspicious of secrecy. We are reluctant to trust anybody with the determination of what our people should and should not know, especially unwilling to let such decisions rest in the hands of the military. Free interchange of knowledge, moreover, is in itself a powerful stimulating force toward scientific invention and discovery.

How are we going to retain both—the ordinary advantages of surprise in development of new weapons, and the freedom of information, freedom of the press and freedom from enforced censorship which are so important in the preservation of all other freedoms? If we resort to laws alone in the protection of restricted information, we run the risk of losing in one direction as much as we might gain in the other. Yet our freedom of the press and kindred freedoms, unless there is strict regard for the responsibilities which accompany them, can in themselves menace the national security on which those freedoms depend.

An incident last month, though perhaps unimportant in itself, illustrates the nature of the problem. A magazine, AVIATION WEEK, reported development of a supersonic airplane which military authorities regard as highly secret. The Department of Justice is looking into statutory grounds for action. It is highly improbable that anything can or should be done under existing law to this magazine. But, in certain circumstances, whether or not they were present in this case, a publication of this sort could be of great disadvantage to the national interest.

There is no easy or quick solution of the dilemma thus presented. But it would seem that at least two steps should be considered. One is to impress upon the consciousness of communications media in the country the danger of careless news treatment of new developments in certain fields. The other is to set up in government a responsible source of advisory information, available to press and radio, concerning subjects whose disclosure would be prejudicial to the country's defense. The lack of any such agency now, together with the contradictory advice which sometimes is given by sources within the government and the inclination of such sources themselves to talk out of turn, create confusion. The success of voluntary censorship during the war was to a large extent due to the centralization of advisory authority in the Office of Censorship and the wisdom with which its policies were applied. . . .

The revival of some such method in peacetime for preservation of reasonable military security would provoke normal skepticism under any conditions and some outright opposition. But in meeting an unprecedented condition in the world today, such machinery might be helpful to the press in discharge of the responsibility it shares with government. If the press lacks responsibility, its freedom is in jeopardy under any conditions.

EDITORIAL, WASHINGTON POST (JAN. 3)—

SUPERSONIC SECURITY—It is debatable whether the editors of AVIATION WEEK magazine actually injured national security in publishing the story that an Air Force experimental rocket plane has gone faster than the speed of sound. If, as the magazine's editors contend, the Air Force had been preparing a release of its own on this accomplishment in breaching the supersonic wall, then all the subsequent fuss is meaningless. Prevention of the leakage of vital information is of course a matter of the utmost importance. But the lesson in the present case will have been lost if the only result is an effort to penalize the magazine. More than anything else, the incident demonstrates the need for a unified, mature security policy in national defense. That there is no such policy now is only too obvious.

It cannot be denied that some information has been published that may be harmful to our long-range security. Much of this information has been of a technical nature, such as was contained in the Smyth report on atomic energy. As one top scientist put it, we have been doing the Russians' research for them. If our defense is to be adequate, then manifestly we must have some military secrets which we do not display in a showcase. A situation in which important information leaks out merely for want of a coordinated security policy is of course dangerous. At the same time we cannot afford to go to the opposite extreme of a completely clamlike approach in which the label "National Security" is applied to every scientific advance.

The problem is one for Secretary Forrestal. Part of the difficulty lies among his subordinates in the various services. There is still a tendency, no doubt a hangover from pre-unification days, for each service to strive to outdo the others in "competing" for publication space. A little less Hollywood press agentry and a little more accent on unity would be helpful. Secondly, there must be recognition that the American press as an entity is not only loyal but is anxious not to violate the requirements of genuine security. Consequently, a basic step in enlisting cooperation of the press is to define what those requirements are.

More than that, there must be an effort to understand the particular problems of the press—to understand, for example, the reaction when the results of a reporter's initiative are bottled up for "security" only to have them released inconsistently elsewhere. What is needed above all else is one agency to which the press can refer its security questions, an agency open 24 hours a day. Not only must this agency have authority to lay down a security policy with respect to outside publication, but there must also be assurance that its decisions will be respected within the services as well. The prime requisite of this office is that it have the confidence of the person with whom it is dealing. There will be no difficulty in enlisting cooperation of the press if the press is convinced that security policy is a matter of intelligent planning and not a helter-skelter affair left to whim and caprice.

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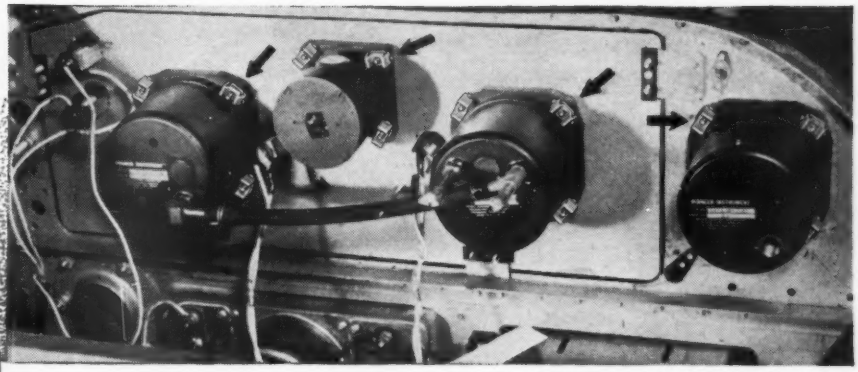

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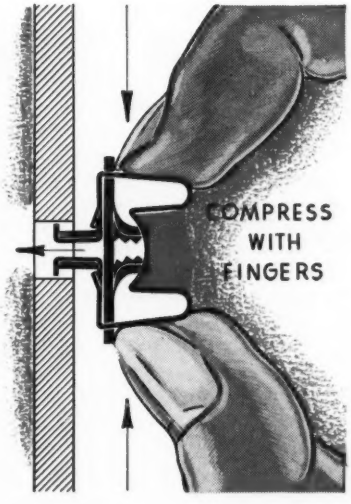

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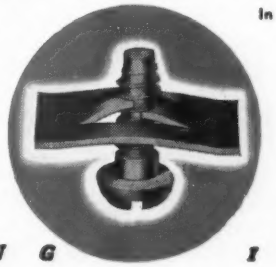

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